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REMEDIAL ENHANCEMENT INVESTIGATION REPORT

AREA 29 - FIRE TRAINING AREA

Prepared for

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1.0 INTRODUCTION

This Remedial Enhancement Investigation (REI) Report has been prepared to document soil and groundwater investigations conducted in February and April 2014 at Area 29, the Fire Training Area, at the Federal Aviation Administration (FAA) William J. Hughes Technical Center (Technical Center), located at the Atlantic City International Airport in New Jersey (see Figure 1). These investigations were conducted to determine if residual soil contamination may be contributing to the continuing presence of benzene, toluene, ethylbenzene and xylene (BTEX) in groundwater at the site and if so, to define the nature and extent of that contamination for the purpose of implementation of remedial enhancements that would provide treatment of the contamination at its source.

2.0 SITE SETTING AND BACKGROUND INFORMATION

Area 29 is located northeast of the Atlantic City International Airport runways and southwest of White Horse Pike, as indicated in Figure 1. The site was constructed in the early 1970s for the training of airport firefighting personnel. The facility consisted of a circular burn area approximately 150 feet in diameter, a small concrete burn pad, two aboveground fuel tanks on a small hill, and two underground tanks for the collection of runoff from the burn pads. Full-scale aircraft test burns were conducted on the large circular burn area, while smaller fuel fires were extinguished on the concrete pad. An underground drain system was used to collect runoff from the circular burn area and divert it to a 10,000-gallon underground circular storage tank. Runoff from the concrete pad was collected in a 5,000-gallon underground storage tank. Both of these tanks were emptied, removed, and disposed of off site in an environmentally safe manner in December 1988.

The Environmental Investigation (EI) identified the presence of contaminants in surface soil, subsurface soil, and groundwater at the site. Polychlorinated biphenyls (PCBs) and total petroleum hydrocarbons (TPH) were detected at levels exceeding cleanup criteria in surface and subsurface soils. A clay layer found at 10 to 14 feet below grade over much of the western and central portions of the site resulted in a perched groundwater condition. The intervening clay layer separates the perched groundwater from the true water table aquifer (shallow aquifer) in a portion of Area 29. Volatile organic compounds (VOCs) were detected in perched groundwater at levels exceeding state or federal drinking water standards (maximum contaminant levels or MCLs) or New Jersey groundwater quality standards (GWQS).

The Area 29 Record of Decision (ROD) was signed on September 20, 1996, documenting a remedy that included the excavation and off-site disposal of PCB-contaminated and TPH-contaminated soil and the extraction and treatment of VOC-contaminated perched groundwater. Excavation and off-site disposal of 4,041 cubic yards of contaminated material was completed in 2001. The soil remediation activities were conducted based on a soil PCB cleanup level of 2 parts per million (ppm) and a TPH cleanup level of 10,000 ppm. Demolition, removal and off-site disposal of debris from the circular burn pad and the former concrete pad was also completed. The groundwater treatment system became operational in July 2004.

In 2010 and 2011, the potential use of surfactant as a treatment enhancement in the area of the perched groundwater impacts was evaluated through the performance of a treatability study

and subsequent pilot test of surfactant application. Post-application groundwater monitoring indicated a decreasing trend in VOC influent levels. However, it was hypothesized that the root mat associated with the phragmites in the sprinkler area may have limited the infiltration of the surfactant. In fall 2012, the phragmites root mat was removed and the area was backfilled with sand. A second round of pilot study surfactant application was performed in June 2013, with surfactant injected directly into well 29-EW1 and applied via sprinkler in the former burn pad area. Total VOC levels in the treatment system influent decreased from an average of approximately 150 parts per billion (ppb) prior to the pilot study to less than 50 ppb in early 2014, after the completion of the second phase of the pilot study. Also, since 2012, only one monitoring well, 29-MW7S, has exhibited contaminants above ROD-based cleanup goals.

3.0 BASIS FOR INVESTIGATION

Based on a review of the groundwater monitoring data collected following the pilot-scale testing, it was suspected that residual soil contamination could be contributing to the continued presence of BTEX in groundwater extracted from the site. Therefore, soil remediation documentation prepared by Horne Engineering Services, Inc. (Horne; the remediation construction contractor at Area 29), groundwater remediation performance testing results, and previous limited Geoprobe® soil/groundwater results were reviewed to determine where residual soil contamination could exist. This evaluation indicated the possible presence of residual BTEX contamination in soils in two distinct areas of the site: the former underground piping, which transported fuel from the two former aboveground storage tanks to the large burn pad, and the former 10,000-gallon underground storage tank area, which received waste runoff from the large burn pad. Therefore, additional Geoprobe® soil and groundwater sampling was conducted in these two targeted areas. Also included in the scope of work was the resampling of three locations (29-GP-BT4, 29-GP-BT6, and 29-GP-BT7) located within the surfactant pilot-scale test area that exhibited the highest total combined concentrations of diesel range organics (DRO) and gasoline range organics (GRO) during previous bench-scale soil sampling activities (i.e., prior to pilot-scale surfactant application). In these three pre-treatment samples, collected at depths of 5 to 6 feet, 6 to 8 feet, and 5 to 7 feet below grade, respectively, the combined DRO/GRO concentrations ranged from 720 to 3,040 ppm.

4.0 INVESTIGATION METHODS

To evaluate the potential presence of residual contamination at levels that could be impacting groundwater quality, TRC established 25-foot sampling grids in the former underground piping area and in the former 10,000-gallon UST area. Direct push Geoprobes® were used to collect soil and groundwater samples from the grid points. In addition, subsurface soil samples were collected from the former sample locations where elevated DRO and GRO concentrations were identified. Details of the investigation methods are provided below.

4.1 Sample Grid Establishment

Two separate sampling grids were established. The sampling grid in the area of the former 10,000 gallon UST was referred to as the eastern grid and the grid in the area of the former underground piping was referred to as the western grid. The grid spacing (25 feet) was the same as that used during the 2001 soil excavation activities at the site. The eastern grid was 75 feet by 150 feet in areal extent. The western grid was originally established to be 100 feet by 200 feet in aerial extent, but was later expanded along its southwestern edge, based on sample results. The grid was established by determining the coordinates of the four outer boundary corners (New Jersey Plane Coordinate System NAD 83) of each grid area utilizing AutoCAD. The coordinates were provided to Adams, Rehmann & Heggan of Hammonton, New Jersey, a New-Jersey-licensed surveyor, who established the outer boundaries of the grids and grid nodal points (25-foot spacing) within the grid boundaries with wooden stakes. The grid boundary coordinates and layouts are indicated on Figure 2. An extension of the western grid was achieved by field measuring the additional step-out grid locations. The historical sample locations were located in the field by the surveyor based on sample location coordinates documented during the bench-scale testing program. The historical sample locations 29-GP-BT4, 29-GP-BT6 and 29-GP-BT7 are shown on Figure 2.

Following the establishment of the sampling grids, TRC utilized a geophysical contractor, EnviroProbe Services, Inc. of Moorestown, New Jersey, to mark subsurface utilities in the study area. TRC also utilized as-built drawings of the remediation system that show the locations of buried electrical and water lines to aid in subsurface utility location. Based on the presence of subsurface utilities in the western grid area, four western grid Geoprobe® locations (29-WGQ27, 29-WGR27, 29-WGS28, and 29-WGU29) were slightly adjusted in the field. The final Geoprobe®

locations are indicated in Figure 3. Also included on Figure 3 is the 2001 soil sampling and remediation grids and the excavation depths (in feet) for each grid below the original land surface.

4.2 Historical Location Soil Sampling

Geoprobe® soil sampling was conducted at the three historical sample locations by a New Jersey-licensed driller, East Coast Drilling, Inc. (ECDI) of Moorestown, New Jersey, working under the oversight of TRC personnel. Soil samples were collected from the historical sample locations (29-GP-BT4, 29-GP-BT6, and 29-GP-BT7) on February 14, 2014. Table 1 presents a summary of the soil boring samples collected, the sample depth and the analyses performed on each sample. The historical sample locations that were resampled in this study are indicated on Figure 3. One of the locations, 29-GP-BT4, is located within the former burn pad area, while the other two locations, 29-GP-BT6 and 29-GP-BT7, are located west of the former burn pad area. 29-GP-BT6 is located in the vicinity of the former underground piping.

The objective of advancing the Geoprobe® soil borings was to resample historical sample locations that exhibited elevated DRO/GRO concentrations to determine the effectiveness of the previous surfactant applications. The soil borings were advanced using Geoprobe® direct-push techniques with Macro-Core® samplers to the targeted depth intervals, as previously described in Section 3. TRC personnel recorded the depth of the recovered sample, the geologic stratigraphy observed, and the level of organic vapors measured using an organic vapor analyzer (OVA). The measured OVA readings at the three sample locations/intervals were as follows:

Sample Location	OVA Reading (ppm)
29-GPBT4(5-6')	7.2
29-GPBT6(6-8')	343.1
29-GPBT7(5-7')	2.2

Soil samples were collected for chemical analysis from these targeted depth intervals. Soil samples collected for VOC analysis consisted of a grab sample collected directly from the Macro-Core® using a Terra Core® soil sampling device and EPA SW-846 field sample collection Method 5035. Soil samples were then collected for GRO and DRO analysis by placing soil from the Macro-Core® in a decontaminated stainless steel bowl, homogenizing it with a decontaminated stainless steel spoon and then placing it into the laboratory-supplied containers. The soil boring samples were submitted to TestAmerica Edison of Edison, New Jersey, a New Jersey-certified

laboratory, for analysis of Target Compound List (TCL) VOCs, GRO and DRO. TCL VOC analysis was by EPA Method 8260C while GRO and DRO analyses were by Method 8015D.

4.3 Grid-Based Soil Sampling

Grid-based Geoprobe® soil sampling was conducted by ECDI under TRC oversight. Soil samples were collected from 28 locations in the eastern grid on February 11, 2014, while soil samples were collected from 45 locations in the western grid on February 12 and February 14, 2014. On April 1, 2014, the western grid was expanded with four additional Geoprobe® locations and the collection of an additional soil sample from one of those locations. The soil boring samples collected and the analyses performed on each sample are summarized in Table 1. Geoprobe® locations and soil sample locations are shown on Figure 3.

The soil borings were advanced using Geoprobe® direct-push techniques with a Macro-Core® sampler. Continuous Macro-Cores® were collected using five-foot-long sampling tubes to a depth of 15 feet below grade for the eastern grid or 12 feet below grade for the western grid, or to the top of the confining clay unit, whichever came first. Following recovery of each Macro-Core® tube, the depth of the recovered sample, the amount of recovered sample, and the observed geologic stratigraphy were recorded. The contents of each Macro-Core® was also screened with an OVA. The most contaminated interval was identified based on the OVA screening results, visual staining and/or odors and a soil sample was collected from that interval for analytical testing. OVA screening results, soil sample depth, other observations (i.e., petroleum odors, staining or sheens, and estimated depths to perched water), and sample recoveries are noted in Tables 2 and 3 for the eastern and western grid areas, respectively. If a contaminated interval could not be determined from these field observations, the sample was collected at the water table. Soil samples collected for VOC analysis consisted of a grab sample collected directly from the Macro-Core® using a Terra Core® soil sampling device and EPA SW-846 field sample collection Method 5035. Each of the selected soil samples was analyzed for TCL VOCs using EPA Method 8260C.

Based on elevated OVA readings (i.e., in the 100s of ppm) measured at Geoprobe® locations along the southwestern edge of the western grid area (i.e., at grid points 29-WGQ22 through 29-WGQ27), a decision was made to extend the grid to the southwest. These additional Geoprobe® locations (29-WGP23 through 29-WGP26) are shown on Figure 3. Because OVA readings were not as high at these additional Geoprobe® locations (i.e., generally less than 100

ppm), a soil sample was collected for chemical analysis at only one location, 29-WGP26, which exhibited the highest OVA readings of the step-out locations. OVA readings and other observations (e.g., petroleum odors, staining or sheens) for the expanded western grid points are provided on Table 3.

In general, most Geoprobe® locations exhibited signs of subsurface contamination (i.e., elevated OVA readings, odors and/or staining/sheens). Clay was also encountered at most locations, typically at depths ranging from approximately 6 to 13 feet below ground surface (bgs). The greater depths to clay were measured at eastern grid locations. At some western grid locations, intervening clay lenses were also identified. The depth to groundwater (estimated by the depth at which wet soils were encountered) generally ranged from approximately 0.25 to 2.5 feet bgs, with the exception of a few locations in the western grid area where wet soils were not encountered until depths of approximately 5.5 to 7.5 feet bgs and 8 to 10 feet bgs.

4.4 Groundwater Sampling

Groundwater samples were proposed to be collected from approximately one-quarter of the most contaminated grid-based Geoprobe® locations, with the locations to be identified based on OVA readings, visual staining and/or observed odors. As a result, groundwater samples were collected at six of the eastern grid locations and nine of the western grid locations on April 1, 2014. The groundwater samples collected and the analyses performed on each sample are summarized in Table 1. The groundwater sample locations are indicated on Figure 4.

The groundwater samples were collected using a decontaminated four-foot long stainless steel groundwater sampling screen driven to the desired sample depth by ECDI using Geoprobe® direct-push methods. Once the desired sample depth was reached, a retractable sleeve within the stainless steel sampler was withdrawn, exposing the screen to the groundwater. Disposable polyethylene tubing was inserted into the hollow drive rods and the tubing intake was set at the midpoint of the screen. A peristaltic pump was then used to purge the groundwater by pumping three screenpoint sampler volumes, during which time groundwater water quality indicator parameters were monitored with a YSI 600XL flow-through meter. Table 4 presents field parameters measured at the time of sampling, as well as observations of odors and sheens. Each VOC sample was obtained from the downhole tubing prior to its passing through the peristaltic pump gears. This was achieved by pumping water into the tubing, then turning off the pump, then

pulling the tubing from the sampler and drive rods, then gravity-draining the contents of the tubing into the VOC sample containers by breaking the seal between the sample tubing and the peristaltic pump gear housing. The groundwater samples were analyzed for TCL VOCs using Method 8260C.

As indicated in Table 4, each of the groundwater samples exhibited strong petroleum odors and three of the samples (29-EG-I15GW (5-9), 29-WG-R24GW (8.5-12.5), and 29-WG-R26GW (6.5-10.5) exhibited a sheen on the surface of the sample. The depth intervals over which the groundwater samples were collected ranged from 4- to 8-feet to 8.5- to 12.5-feet.

4.5 Quality Assurance/Quality Control

Quality assurance/quality control (QA/QC) samples of soil and groundwater were collected for DRO, GRO and/or EPA Method 8260C analyses. The QA/QC samples included blind duplicates, field blanks, trip blanks and matrix spike/matrix spike duplicates (MS/MSDs). A total of 74 soil samples and 14 groundwater samples were collected, resulting in the collection of 6 blind duplicate samples, 1 trip blank sample, 4 field blank samples, and 6 MS/MSD samples. Field blank samples were collected during the soil sampling effort by pouring laboratory-supplied distilled, deionized water through a clean unused Macro-Core®. A field blank sample was collected during the groundwater sampling effort by running laboratory-supplied distilled, deionized water through disposable polyethylene tubing that is used to collect the groundwater samples. A trip blank and a temperature blank accompanied the groundwater sample cooler. Blind duplicate samples and MS/MSD samples were collected at a rate of one per 20 soil or groundwater samples. All samples were maintained under strict chain-of-custody protocols. VOC samples were placed on ice in coolers immediately following collection, and custody seals were placed on all coolers prior to shipment via FedEx to the analytical laboratory. All chemical analyses were performed by TestAmerica Edison of Edison, New Jersey.

The only decontamination procedure utilized in the field investigation was the decontamination of Macro-Core® drive rods, Macro-Core® core barrels and groundwater sampling screens between locations by cleaning the drive rods, core barrels and screens with clean water and Alconox.

5.0 INVESTIGATION RESULTS

5.1 Data Screening Criteria

The Area 29 ROD did not include contaminant-specific soil remediation goals for volatile organics. A 10,000 ppm total organics soil remediation level was established in the ROD based on New Jersey soil cleanup criteria available at the time. Therefore, for the purposes of evaluating the VOC field sampling results, soil data were compared to contaminant-specific New Jersey Soil Remediation Standards (NJSRS) based on direct contact under non-residential exposure conditions and default impact to groundwater (IGW) soil screening levels. Residential NJSRS were also considered, although the Area 29 ROD is based on future non-residential use of the site. Groundwater samples were evaluated relative to the groundwater remedial goals established in the Area 29 ROD. For detected constituents for which no ROD-based cleanup goals exist, the results were compared to state and federal primary drinking water standards (maximum contaminant levels or MCLs) and New Jersey Groundwater Quality Standards (GWQS).

5.2 Historical Sampling Location Results

A summary of the analytical results for the soil sampling conducted in 2014 at the historical sample locations is presented in Table 5, along with the historical sample results. In the current soil samples, GRO was detected in two of the three samples at concentrations ranging from 2.4 to 800 ppm while DRO was detected in each of the three samples (and duplicate) at concentrations ranging from 0.028 ppm to 1.4 ppm. The highest levels of contamination were detected in sample 29-GPBT6(6-8'), which was also the sample interval that exhibited the highest OVA readings of the three targeted sample intervals. This sample location is located west of the burn pad area, in the former underground piping area. When compared to the 2010 pre-surfactant application results, the recent results are two or more orders of magnitude less than the historic sample results, with the exception of GRO at 29-GPBT6(6-8'), which is slightly higher than the pre-treatment result. None of the GRO or DRO results exceeded the 10,000 ppm total organics soil cleanup level established in the Area 29 ROD.

The VOC analyses of the historical sample locations indicates that residual contaminant levels do not exceed current NJSRS. Total xylenes was detected in one sample, 29-GPBT6(6-8'), at a level that exceeds the default IGW soil screening level.

5.3 Grid-Based Sampling Results

Summaries of the analytical results for the soil samples collected within the eastern grid and western grid are presented in Tables 6 and 7, respectively. A summary of the analytical results for the groundwater samples collected within the eastern grid and western grid are presented in Table 8. Constituents detected in the soil at levels exceeding data screening criteria combined with the 2001 soil sampling and remediation grids and the excavation depths (in feet) for each grid are indicated on Figure 5. Constituents detected in the groundwater samples at levels exceeding ROD-based cleanup criteria and total BTEX isoconcentration contour lines are indicated on Figure 6.

In the eastern grid, VOCs detected in the soil samples include petroleum-related compounds, two chlorinated VOCs (1,1,1-trichloroethane and 1,1,2,2-tetrachloroethane), acetone, carbon disulfide, and methyl acetate. No samples exceeded the ROD-based 10,000 ppm total organics soil cleanup level or the non-residential NJSRS. Only one constituent, 1,1,2,2-tetrachloroethane, was detected above the residential NJSRS and it was detected above the standard in only one sample. It was present in sample 29-EGI15(3') at a level of 1.5 ppm, compared to the residential NJSRS of 1.0 ppm. Four constituents were detected above default IGW screening levels, including benzene, ethylbenzene, total xylenes, and 1,1,2,2-tetrachloroethane. Benzene, ethylbenzene and/or total xylenes were present above default IGW criteria at eleven sample locations, predominantly those located in the southern portion of the sample grid, while 1,1,2,2-tetrachloroethane exceeded IGW screening levels at only two locations (one of which also exhibited exceedances of the petroleum-related compounds). Benzene was the sole compound present above default IGW screening levels at seven of eleven locations. Because many of the samples required dilution, benzene detection limits exceeded default IGW criteria at nine additional locations (29-EGF12(1.5'), 29-EGF13(6.5'), 29-EGF15(1.5'), 29-EGG12(6'), 29-EGG14(6'), 29-EGH13(3'), 29EGH14(6'), 29-EGH15(2'), and 29-EGI11(6')) that did not exhibit IGW screening level exceedances for any other constituents.

In the western grid, VOCs detected in the soil samples include petroleum-related compounds, acetone, and carbon disulfide. No samples exceeded the ROD-based 10,000 ppm total organics soil cleanup level. Benzene was the only constituent detected above the NJSRS. Benzene was detected in sample 29-WGR26(9.0') at a concentration of 13 ppm, which exceeds the non-residential NJSRS of 5 ppm and the residential NJSRS of 2 ppm. Constituents detected

above default IGW screening levels were limited to BTEX compounds, with most samples exhibiting more than one compound above the screening levels. They were present above default IGW criteria at twenty sample locations, predominantly those located in the central and southwestern portions of the sample grid area. Because many of the samples required dilution, benzene detection limits exceeded default IGW criteria at seven additional locations (29-WGQ27(6.5'), 29-WGS28(7.0'), 29-WGT23(7.5'), 29-WGT24(7.5'), 29-WGT27(6.5'), 29-WGT28(6.0'), and 29-WGU27(7.6')) that did not exhibit exceedances for any other constituents.

Five groundwater samples were collected from eastern grid locations while nine groundwater samples were collected from western grid locations. VOCs detected in the groundwater samples included BTEX compounds, other petroleum-related contaminants, 1,1-dichloroethane, 1,1-dichloroethene, chloroethane, methyl ethyl ketone (MEK or 2-butanone), methyl isobutyl ketone (MIBK or 4-methyl-2-pentanone), and acetone. The only groundwater contaminants detected above the ROD-based cleanup levels were the BTEX compounds. Two to four BTEX compounds were detected at concentrations exceeding ROD-based cleanup levels in each of the groundwater samples that were collected. The highest concentrations of BTEX compounds were detected in the western grid samples. The groundwater samples collected from the three locations closest to the former underground fuel lines that ran from the former aboveground fuel tanks to the former circular burn pad area exhibited the highest total BTEX concentrations, ranging from 8,330 ppb to 9,420 ppb.

For those detected constituents for which cleanup standards were not established in the ROD, 1,1-dichloroethene was the only detected constituent for which state and federal MCLs have been established. 1,1-Dichloroethene was detected in two groundwater samples at estimated concentrations of 2.3 and 2.5 ppb, both of which are less than the federal MCL of 7 ppb but above the state MCL of 2 ppb. These samples were collected at grid locations 29-EGG17 and 29-EGH17, both located at the southern end of the eastern sampling grid. For the remaining detected compounds, chloroethane was the only compound detected at a level that exceeded the New Jersey GWQS. Chloroethane was detected in sample 29-EG-H17GW(5-9) at a concentration of 33 ppb, which exceeds the GWQS of 5 ppb.

The eastern grid groundwater sample locations included the locations that exhibited the highest benzene soil concentration (29-EGH17), ethylbenzene soil concentration (29-EGG13) and highest total xylenes and 1,1,2,2-tetrachloroethane concentrations (29-EGI15) for the eastern grid

soil samples. Benzene, ethylbenzene and total xylenes were detected above ROD-based cleanup criteria in the corresponding groundwater samples. 1,1,2,2-Tetrachloroethane, however, was not detected in the groundwater sample collected at 29-EGI15. The highest total concentration of BTEX compounds in groundwater in the eastern grid (2,803 ppb) was detected at sample location 29-EGH17, which is located at the southern end of the sampling grid, near the eastern edge of the former circular burn pad.

The western grid groundwater sample locations included the locations that exhibited the second-highest benzene, ethylbenzene and total xylenes soil concentrations (29-WGQ25) and the highest toluene soil concentration (29-WGS26) for the western grid soil samples. A groundwater sample was collected at the western grid sample location that exhibited the highest benzene, ethylbenzene and total xylenes soil concentrations (29-WGR26), however, the groundwater results exhibited only the fourth highest total BTEX concentration of 7,650 ppb for the western grid samples. As stated previously, the highest BTEX groundwater concentrations were detected in the western grid samples located closest to the former underground fuel lines.

5.4 QA/QC Sample Results

Duplicate soil and groundwater sample results are presented in Tables 5 through 8, adjacent to the original sample results. In general, the duplicate results correlate well with the original sample results.

Field blank and trip blank results are presented in Table 9. No constituents were detected in the field blank or trip blank samples.

For the soil analytical results, the acetone results for some soil samples were qualified due to the presence of acetone in the associated laboratory blank.

6.0 INTERPRETATION, CONCLUSIONS AND RECOMMENDATIONS

The following sections discuss both the presence and distribution of residual soil and groundwater contamination at Area 29 and the effectiveness of the surfactant application based on pre-treatment and post-treatment soil samples collected from the treatment area.

6.1 Nature and Extent of Contamination

The Area 29 remedial enhancement investigation indicates that residual soil contamination is present at levels that could continue to impact groundwater quality in the areas of former underground piping, near the former 10,000-gallon underground storage tank area, and in the eastern portion of the former circular burn pad area. Petroleum odors, staining and/or sheens were commonly noted during the advancement of Geoprobe® soil borings and groundwater sample screens in both investigation areas. As shown on Figures 5 and 6, BTEX compounds were commonly detected in grid area soils at levels exceeding IGW soil screening levels and groundwater impacts above ROD-based cleanup levels remain in these areas. Contaminant levels are generally higher in the western grid samples than in the eastern grid samples. All of the soil samples collected from within the footprint of the 2001 soil remediation area (with the exception of western grid soil samples WG-U28 and WG-U29) were collected from beneath the final depth of excavation. A number of other soil samples which exceeded the IGW soil screening levels were collected from areas outside of the 2001 soil excavation footprint, especially in the area of the former underground piping and the eastern portion of the former circular burn pad. Similarly, groundwater samples collected from within the 2001 soil remediation footprint which exceeded the ROD-based cleanup levels were collected from intervals beneath the final depth of excavation. Furthermore, the groundwater samples which exhibited the highest total BTEX concentrations were collected from areas outside the 2001 excavation footprint.

In the eastern grid, soil impacts were more prevalent in the southern half of the grid and in the two soil samples immediately adjacent to the piping that led from the former circular burn pad area to the former 10,000 gallon underground storage tank. Groundwater samples collected from the eastern grid confirm that BTEX compounds are still present in the groundwater in these impacted soil areas. 1,1,2,2-Tetrachloroethane was detected in two soil samples from the eastern grid area but was not detected in groundwater samples from this area, indicating that, where present, 1,1,2,2-tetrachloroethane is not adversely impacting groundwater quality. Its presence in

the soil at concentrations below non-residential NJSRS but above residential NJSRS is consistent with the non-residential basis of the Area 29 ROD. 1,1-Dichloroethene was detected in two groundwater samples, both located at the southern end of the eastern sampling grid, at estimated concentrations that slightly exceed the state MCL of 2 ppb. However, there is no groundwater cleanup standard established in the ROD for this compound.

In the western grid, soil impacts were most prevalent immediately to the north and south of the former underground fuel lines, and extending slightly further to the south than to the north. Groundwater samples collected from the western grid confirm that BTEX compounds are still present in the groundwater in these impacted soil areas. The greatest impacts were noted in the groundwater samples located closest to the former underground fuel lines. Historically, the remedial system extraction well (29-EW1) and Area 29 monitoring well (29-MW7S) located to the south of the former underground fuel lines have exhibited the highest benzene levels of the Area 29 extraction and monitoring wells.

An estimation of the volume of soils that exceed the default IGW soil screening levels (and presumably continue to impact groundwater at Area 29) can be made by evaluating the aerial and vertical extent of soil contamination as shown on Figure 5 and included on Tables 2 and 3. For the eastern grid, which has yet to be fully delineated, an approximate 80 foot x 60 foot area with impacted soils extending to a depth of approximately 10 feet is present. This volume of soil equals approximately 1,800 cubic yards (yd^3). The soil impacts in the western grid area are better delineated and are about 160 feet long by 90 feet wide by approximately 10 feet deep. These dimensions equal approximately 5,300 yd^3 for the western grid. Therefore, an estimate of soils that exceed the default IGW soil screening levels for both grid areas at Area 29 is greater than 7,000 yd^3.

6.2 Post-Treatment Soil Characterization

The collection of soil samples from three locations that exhibited elevated pre-treatment GRO and DRO levels generally indicates that the application of surfactant has been successful in reducing petroleum-related contaminant levels in the soils. With the exception of GRO in one soil sample, GRO and DRO levels were reduced by two levels of magnitude or more. Similarly, VOC levels at the resampled locations were below default IGW screening criteria for all analytes except one (total xylenes) at one sample location.

6.3 Revised Conceptual Site Model

Based on the results of the remedial enhancement investigations, it appears that residual soil contamination that complies with the Area 29 ROD and is located to the southwest of the pilot-scale surfactant application areas is continuing to act as a source of groundwater impacts to the western grid area. On-going groundwater extraction within the perched zone adjacent to the former circular burn pad area is likely pulling impacted groundwater back towards the former burn pad, resulting in continued subsurface impacts to the west and southwest of the former burn pad, as contaminated groundwater from the untreated area overlaps areas of previous surfactant application. Previously treated sample locations that are located to the west-northwest of the former circular burn pad or in the eastern grid, outside of this residual untreated contamination, exhibited significant reductions in soil contaminant levels. However, soil contamination in the southern portion of the eastern grid and western grid areas and continued detections of elevated BTEX levels in groundwater remain within the eastern and western grids, suggesting additional treatment of these areas may be required.

6.4 Conclusions and Recommendations

Additional remediation will be required at Area 29 before the site can be closed out under the Superfund program. The detection of BTEX components at concentration exceeding ROD-based cleanup criteria at each of the fourteen groundwater sample locations indicates that additional groundwater remediation is necessary and that residual petroleum-contaminated soils continue to impact groundwater quality.

It is recommended that the results of this study be used in designing hot spot or widespread soil excavation (and dewatering), and/or full-scale application of surfactant, or other bioamendment, at Area 29 to address these residually-contaminated soils. Soils to the southwest of the previous surfactant application areas need to be incorporated within the scope of future soil excavation and/or surfactant/bioamendment applications to ensure that these impacted areas are adequately addressed. Also, soils within the eastern grid area will require additional remediation. Based on the presence of soil and groundwater impacts above applicable screening criteria at the southernmost eastern grid sample locations, additional soil and groundwater sampling further to the south may be appropriate to ensure the full delineation of soil and groundwater impacts prior

to the design of the full-scale enhanced remediation. The additional sampling work can utilize a Geoprobe® dir ect push rig equipped with a Laser Induced Fluorescence/Ultraviolet Optical Scanning Tool (LIF/UVOST®) and/or Membrane Interface Probe (MIP) which can efficiently conduct qualitative vertical profiling for VOCs such as petroleum and chlorinated hydrocarbons in both the vadose and saturated zones. The LIF/MIP work would be supplemented with additional soil and groundwater samples collected for analytical testing.

Furthermore, the installation of additional groundwater extraction well(s) may be appropriate to supplement any future soil excavation and/or full-scale surfactant/bioamendment application as there currently is additional flow capacity (approximately 20 gallons per minute) available in the Area 29 groundwater remediation system treatment plant. The additional groundwater extraction well(s) could provide another groundwater contaminant mass removal point(s), and potentially also act as a surfactant/bioamendment injection point(s).

TABLE 1
SOIL, GROUNDWATER AND QA/QC BLANK SAMPLE SUMMARY
February - April 2014
Area 29 Remedial Enhancement Investigation
FAA William J. Hughes Technical Center

SAMPLE IDENTIFICATION	SAMPLE DATE	DEPTH[1]	ANALYSIS[2]	NOTES[3]
GEOPROBE SOIL SAMPLES				
HISTORICAL SAMPLE LOCATIONS				
29-GPBT4(5-6')	02/14/14	5-6	TCL VOCs; GRO; DRO	
29-GPBT6(6-8')	02/14/14	6-8	TCL VOCs; GRO; DRO	MS/MSD Sample
29-GPBT7(5-7')	02/14/14	5-7	TCL VOCs; GRO; DRO	
29-GPBT7(15-17')	02/14/14	5-7	TCL VOCs; GRO; DRO	Duplicate of 29GBPT(5-7')
EASTERN GRID				
29-EGF11(0.16')	02/11/14	0.16	TCL VOCs	
29-EGF12(1.5')	02/11/14	1.5	TCL VOCs	
29-EGF13(6.5')	02/11/14	6.5	TCL VOCs	
29-EGF14(8')	02/11/14	8.0	TCL VOCs	
29-EGF15(1.5')	02/11/14	1.5	TCL VOCs	
29-EGF16(6')	02/11/14	6.0	TCL VOCs	
29-EGF17(6')	02/11/14	6.0	TCL VOCs	
29-EGG11(1.5')	02/11/14	1.5	TCL VOCs	
29-EGG12(6')	02/11/14	6.0	TCL VOCs	
29-EGG13(6.5')	02/11/14	6.5	TCL VOCs	
29-EGG14(6')	02/11/14	6.0	TCL VOCs	
29-EGG15(6')	02/11/14	6.0	TCL VOCs	
29-EGG16(3')	02/11/14	3.0	TCL VOCs	
29-EGG17(9')	02/11/14	9.0	TCL VOCs	
29-EGH11(8')	02/11/14	8.0	TCL VOCs	
29-EGH12(2.5')	02/11/14	2.5	TCL VOCs	
29-EGH13(3')	02/11/14	3.0	TCL VOCs	MS/MSD Sample
29-EGH14(6')	02/11/14	6.0	TCL VOCs	
29-EGH15(2')	02/11/14	2.0	TCL VOCs	
29-EGH16(6')	02/11/14	6.0	TCL VOCs	
29-EGH17(4.5')	02/11/14	4.5	TCL VOCs	
29-EGI11(6')	02/11/14	6.0	TCL VOCs	
29-EGI12(2.5')	02/11/14	2.5	TCL VOCs	
29-EGI13(13')	02/11/14	8.0	TCL VOCs	
29-EGI14(9.6')	02/11/14	9.6	TCL VOCs	
29-EGI14(19.6')	02/11/14	9.6	TCL VOCs	Duplicate of 29-EGI14(9.6')
29-EGI15(3')	02/11/14	3.0	TCL VOCs	
29-EGI16	02/11/14	1.25	TCL VOCs	
29-EGI17(17.5')	02/11/14	12.5	TCL VOCs	
WESTERN GRID				
29-WG-P26 (5.75)	04/01/14	5.75	TCL VOCs	
29-WGQ21(10.6')	02/12/14	10.6	TCL VOCs	
29-WGQ22(12.5')	02/12/14	7.5	TCL VOCs	
29-WGQ23(6.6')	02/12/14	6.6	TCL VOCs	
29-WGQ24(6')	02/12/14	6.0	TCL VOCs	
29-WGQ25(8.5')	02/12/14	8.5	TCL VOCs	
29-WGQ25(18.5')	02/12/14	8.5	TCL VOCs	Duplicate of 29-WGQ25(8.5')
29-WGQ26(6.3')	02/12/14	6.3	TCL VOCs	MS/MSD Sample
29-WGQ27(6.5')	02/12/14	.6.5	TCL VOCs	
29-WGQ28(1.0')	02/12/14	1.0	TCL VOCs	
29-WGQ29(6.0')	02/12/14	6.0	TCL VOCs	
29-WGR21(2.5')	02/12/14	2.5	TCL VOCs	
29-WGR22(13.5')	02/12/14	5.5	TCL VOCs	
29-WGR23(6.5')	02/12/14	6.5	TCL VOCs	
29-WGR24(9.0')	02/12/14	9.0	TCL VOCs	
29-WGR25(6.0')	02/12/14	6.0	TCL VOCs	
29-WGR26(9.0')	02/12/14	9.0	TCL VOCs	
29-WGR27(6.0')	02/12/14	6.0	TCL VOCs	
29-WGR28(6.0')	02/12/14	6.0	TCL VOCs	MS/MSD Sample
29-WGR29(2.5')	02/12/14	2.5	TCL VOCs	
29-WGR29(12.5')	02/12/14	12.0	TCL VOCs	Duplicate of 29-WGR29(2.5')

TABLE 1
SOIL, GROUNDWATER AND QA/QC BLANK SAMPLE SUMMARY
February - April 2014
Area 29 Remedial Enhancement Investigation
FAA William J. Hughes Technical Center

SAMPLE IDENTIFICATION	SAMPLE DATE	DEPTH[1]	ANALYSIS[2]	NOTES[3]
WESTERN GRID (CONTINUED)				
29-WGS21(1.0')	02/12/14	1.0	TCL VOCs	
29-WGS22(8.5')	02/12/14	8.5	TCL VOCs	
29-WGS23(10.5')	02/12/14	10.5	TCL VOCs	
29-WGS24(6.5')	02/12/14	6.5	TCL VOCs	
29-WGS25(6.0')	02/12/14	6.0	TCL VOCs	
29-WGS26(6.0')	02/12/14	6.0	TCL VOCs	
29-WGS27(6.0')	02/12/14	6.0	TCL VOCs	
29-WGS28(7.0')	02/12/14	7.0	TCL VOCs	
29-WGS29(2.3')	02/12/14	2.3	TCL VOCs	
29-WGT21(10.5')	02/14/14	10.5	TCL VOCs	
29-WGT22(7.5')	02/14/14	7.5	TCL VOCs	MS/MSD Sample
29-WGT23(7.5')	02/14/14	7.5	TCL VOCs	
29-WGT24(7.5')	02/14/14	7.5	TCL VOCs	
29-WGT24(17.5')	02/14/14	7.5	TCL VOCs	Duplicate of 29-WGT24(7.5')
29-WGT25(6.5')	02/14/14	6.5	TCL VOCs	
29-WGT26(6.5')	02/14/14	6.5	TCL VOCs	
29-WGT27(6.5')	02/14/14	6.5	TCL VOCs	
29-WGT28(6.0')	02/14/14	6.0	TCL VOCs	
29-WGT29(6.0')	02/14/14	6.0	TCL VOCs	
29-WGU21(3.0')	02/14/14	3.0	TCL VOCs	
29-WGU22(10.5')	02/14/14	10.5	TCL VOCs	
29-WGU23(11.6')	02/14/14	6.6	TCL VOCs	
29-WGU24(10.5')	02/14/14	10.5	TCL VOCs	
29-WGU25(10.5')	02/14/14	10.5	TCL VOCs	
29-WGU26(7.0')	02/14/14	7.0	TCL VOCs	
29-WGU27(7.6')	02/14/14	7.6	TCL VOCs	
29-WGU28(2.0')	02/14/14	2.0	TCL VOCs	
29-WGU29(3.0')	02/14/14	3.0	TCL VOCs	
GEOPROBE GROUNDWATER SAMPLES				
29-EG-G13GW (4.5-8.5)	04/14/14	4.5-8.5	TCL VOCs	MS/MSD Sample
29-EG-G15GW(4-8)	04/14/14	4-8	TCL VOCs	
29-EG-G15GW (14-18)	04/14/14	4-8	TCL VOCs	Duplicate of 29-EG-G15GW(4-8)
29-EG-G17GW (7-11)	04/14/14	7-11	TCL VOCs	
29-EG-H17GW (5-9)	04/14/14	5-9	TCL VOCs	
29-EG-I15GW (5-9)	04/14/14	5-9	TCL VOCs	
29-WG-Q23GW (5.5-9.5)	04/14/14	5.5-9.5	TCL VOCs	
29-WG-Q24GW (4.5-8.5)	04/14/14	4.5-8.5	TCL VOCs	
29-WG-Q25GW (5-9)	04/14/14	5-9	TCL VOCs	
29-WG-Q26GW (5-9)	04/14/14	5-9	TCL VOCs	
29-WG-R23GW (5.5-9.5)	04/14/14	5.5-9.5	TCL VOCs	
29-WG-R24GW (8.5-12.5)	04/14/14	8.5-12.5	TCL VOCs	
29-WG-R26GW (6.5-10.5)	04/14/14	6.5-10.5	TCL VOCs	
29-WG-S24GW (4.5-8.5)	04/14/14	4.5-8.5	TCL VOCs	
29-WG-S26GW (5-9)	04/14/14	5-9	TCL VOCs	
QA/QC BLANKS				
FB021114	02/11/14	NA	TCL VOCs	
FB021214	02/12/14	NA	TCL VOCs, GRO, DRO	
FB021414	02/14/14	NA	TCL VOCs	
FB040114	04/01/14	NA	TCL VOCs	
TB040114	04/01/14	NA	TCL VOCs	

NOTES:

(1) - Depths measured from ground surface (in feet)

(2) - ANALYSIS CODES:

TCL VOCs: Target Compound List Volatile Organic Compounds (Method 8260C)

GRO: Gasoline-range organics (Method 8015D)

DRO: Diesel-range organics (Method 8015D)

(3) - MS/MSD: Matrix Spike/ Matrix Spike Duplicate

TABLE 2
SUMMARY OF OVA READINGS AND OBSERVATIONS - EASTERN GRID
Area 29 Remediation Enhancement Investigation
FAA William J. Hughes Technical Center

Eastern Grid							
Boring Number	OVA Reading (ppm)		Observations[2]	Depth (ft)	Recovery (ft)	Soil Sample Depth (ft)	Approx.[3] Water Table Depth (ft)
EGF11	Max:	0.9	N/O, N/S	0-5	3.25	0.16	2.5
	Average:	0.85					
	Max:	0.8	N/O, N/S	5-10	2.0		
	Average:	0.8					
EGF12	Max:	209.5	Moderate PO/St	0-5	3.3	1.5	2.5
	Average:	192.9					
	Max:	8.5	Moderate PO/St to 7.6 ft	5-10	3.6		
	Average:	6.1					
EGF13	Max:	359.8	Strong PO/St/Sh	0-5	3.25	6.5	2.5
	Average:	181.8					
	Max:	533.4	Strong PO/St/Sh	5-10	5.0		
	Average:	306.45					
	Max:	237.5	Strong PO/St/Sh to 12.5 ft	10-15	3.2		
	Average:	216.45					
EGF14	Max:	2.5	Mild PO/St	0-5	3.25	8.0	1
	Average:	2.35					
	Max:	253.8	Mild PO/St	5-10	5.0		
	Average:	128.1					
	Max:	238.5	Mild PO/St to 13 ft	10-15	4.0		
	Average:	222.65					
EGF15	Max:	13.3	Moderate PO/St	0-5	4.2	1.5	2
	Average:	8.9					
	Max:	3.8	Moderate PO/St to 9.3 ft	5-10	5.0		
	Average:	3.7					
EGF16	Max:	12.3	Strong PO/Sh	0-5	2.8	6.0	1
	Average:	6.95					
	Max:	244.5	Strong PO/Sh	5-10	3.0		
	Average:	125.85					
	Max:	20.8	Strong PO/Sh to 13 ft	10-15	4.0		
	Average:	12.7					
EGF17	Max:	209.5	Moderate PO/St/Sh	0-5	3.6	6.0	0.5
	Average:	106.45					
	Max:	518	Moderate PO/St/Sh to 8.3 ft	5-10	4.0		
	Average:	264.8					
EGG11	Max:	1.3	N/O, N/S	0-5	3.25	1.5	1.5
	Average:	1.2					
	Max:	0.9	N/O, N/S	5-10	4.0		
	Average:	0.85					
EGG12	Max:	226.5	Mild PO	0-5	3.5	6.0	2.5
	Average:	97.3					
	Max:	26.8	Moderate PO to 7.3 ft; mild PO to 8.1 ft	5-10	3.1		
	Average:	16.3					
EGG13	Max:	333.5	Mild PO/St/Sh	0-5	3.0	6.5	0.5
	Average:	287.6					
	Max:	405.3	Strong PO/St/Sh	5-10	4.0		
	Average:	225.6					
	Max:	56.3	Mild PO/St/Sh	10-15	2.5		
	Average:	32.3					
EGG14	Max:	7.9	Mild PO/St	0-5	3.5	6.0	1.5
	Average:	5.4					
	Max:	427	Strong PO/Sh	5-10	3.6		
	Average:	394.6					
	Max:	177.6	Strong PO/Sh to 10.7 ft	10-15	4.0		
	Average:	177.6					

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Eastern Grid							
Boring Number	**OVA Reading (ppm)**		**Observations[2]**	**Depth (ft)**	**Recovery (ft)**	**Soil Sample Depth (ft)**	**Approx.[3] Water Table Depth (ft)**
EGG15	Max:	8.9	Mild PO/St	0-5	3.4	6.0	1
	Average:	7.05					
	Max:	495	Strong PO/St to 7.5 ft	5-10	3.2		
	Average:	287.35					
	Max:	4.8	Mild PO	10-15	1.0		
	Average:	4.8					
EGG16	Max:	74.4	Moderate PO/St/Sh	0-5	3.4	3.0	1
	Average:	44.65					
	Max:	39	Moderate to Strong PO/Sh	5-10	3.8		
	Average:	29.75					
	Max:	5.1	Strong PO/Sh	10-15	1.0		
	Average:	5.1					
EGG17	Max:	38.5	Moderate PO	0-5	3.3	9.0	1.5
	Average:	20.2					
	Max:	500.7	Moderate PO/St/Sh	5-10	4.2		
	Average:	391					
	Max:	51.7	Moderate PO/St/Sh to 12.6 ft	10-15	4.6		
	Average:	30.9					
EGH11	Max:	1.4	N/O, N/S	0-5	3.3	8.0	2.5
	Average:	1.25					
	Max:	2.4	Mild PO 6.3 to 7 ft	5-10	5.0		
	Average:	1.95					
EGH12	Max:	410.9	Mild PO/Sh	0-5	3.5	2.5	2.5
	Average:	298.8					
	Max:	21.8	Moderate PO/Sh	5-10	2.5		
	Average:	19.85					
	Max:	67	Moderate PO/Sh to 11.25 ft	10-15	2.0		
	Average:	67					
EGH13	Max:	323.6	St/Sh	0-5	2.9	3.0	2.5
	Average:	165.2					
	Max:	310.5	St/Sh to 6.9 ft	5-10	1.9		
	Average:	287.15					
	Max:	[1]	N/O, N/S	10-15	5.0		
	Average:	[1]					
EGH14	Max:	53.9	St/Sh	0-5	3.1	6.0	2
	Average:	52.95					
	Max:	405	St/Sh to 6.8 ft	5-10	2.8		
	Average:	252					
EGH15	Max:	475.9	St/Sh	0-5	3.1	2.0	1.5
	Average:	433.55					
	Max:	74.5	St/Sh to 6.8 ft, Mild PO 7.6 to 8.9 ft	5-10	3.9		
	Average:	41					
	Max:	183	Mild PO to 12.5 ft	10-15	3.8		
	Average:	97.1					
EGH16	Max:	405.9	Mild PO/St/Sh	0-5	3.6	6.0	2.5
	Average:	259.1					
	Max:	429.1	Heavily petroleum impacted to 7.8 ft	5-10	3.25		
	Average:	272					
	Max:	[1]	N/O, N/S	10-15	1.5		
	Average:	[1]					
EGH17	Max:	318.5	Mild St/Sh	0-5	2.6	4.5	2
	Average:	180.1					
	Max:	311.5	Mild St/Sh to 8.2 ft	5-10	3.5		
	Average:	170					

TABLE 2
SUMMARY OF OVA READINGS AND OBSERVATIONS - EASTERN GRID
Area 29 Remediation Enhancement Investigation
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Eastern Grid							
Boring Number	OVA Reading (ppm)		Observations[2]	Depth (ft)	Recovery (ft)	Soil Sample Depth (ft)	Approx.[3] Water Table Depth (ft)
EGI11	Max:	2.2	N/O, N/S	0-5	3.3	6.0	1
	Average:	1.95					
	Max:	64.2	N/O, N/S	5-10	3.3		
	Average:	36.15					
	Max:	5.8	N/O, N/S	10-15	0.5		
	Average:	5.8					
EGI12	Max:	34.4	Mild PO/St/Sh	0-5	3.0	2.5	1.5
	Average:	17.95					
	Max:	10.1	Mild PO/St/Sh to 8 ft	5-10	4.2		
	Average:	8.5					
EGI13	Max:	3.4	Moderate PO/St/Sh	0-5	3.4	8.0	2
	Average:	3.0					
	Max:	5.3	Moderate PO/St/Sh to 8.3 ft	5-10	5.0		
	Average:	4.15					
EGI14	Max:	2.8	Moderate PO/St/Sh	0-5	3.5	9.6	1.5
	Average:	2					
	Max:	4.5	Mild PO to 5.5 ft	5-10	3.6		
	Average:	4.15					
EGI15	Max:	670.8	Strong PO/St/Sh	0-5	3.4	3.0	2.5
	Average:	335.9					
	Max:	28.9	Strong PO/St/Sh to 7.4 ft	5-10	3.5		
	Average:	19					
EGI16	Max:	451	Strong PO/St/Sh	0-5	3.1	1.25	2
	Average:	225.85					
	Max:	16	Strong PO/St/Sh to 7.5 ft	5-10	5.0		
	Average:	14					
EGI17	Max:	14.1	N/O, N/S	0-5	3.2	12.5	2.5
	Average:	8.6					
	Max:	22.4	N/O, N/S	5-10	3.5		
	Average:	13.3					
	Max:	110.1	Moderate PO to 11 ft	10-15	3.5		
	Average:	59					

[1] No measurements were made from the lowest sample interval (10 to 15 feet).

[2] PO = petroleum odor; St = staining; Sh = sheen; N/O = no odor; N/S = no staining

[3] Approximate water table depth is estimated based on soil moisture content observations and does not necessarily reflect actual water table.
All depths are in feet below ground surface.

TABLE 3
SUMMARY OF OVA READINGS AND OBSERVATIONS - WESTERN GRID
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Western Grid							
Boring Number	OVA Reading (ppm)		Observations[2]	Depth (ft)	Recovery (ft)	Soil Sample Depth (ft)	Approx.[3] Water Table Depth (ft)
WGP23	Max:	4.8	No to Slight PO	0-5	2.9	NA	1.3
	Average:	1.2					
	Max:	112	Slight to Strong PO/St	5-10	3.5		
	Average:	42.4					
	Max:	1.3	PO	10-12	2.0		
	Average:	0.9					
WGP24	Max:	0	N/O, N/S	0-5	2.8	NA	NM
	Average:	0					
	Max:	0.1	N/O, N/S	5-10	2.8		
	Average:	0.03					
	Max:	0	N/O, N/S	10-12	2.0		
	Average:	0					
WGP25	Max:	0	N/O, N/S	0-5	2.75	NA	NM
	Average:	0					
	Max:	54.7	Slight PO	5-10	3.4		
	Average:	21.9					
	Max:	4.6	PO	10-12	1.25		
	Average:	3.1					
WGP26	Max:	99	PO	0-5	2.6	5.75	NM
	Average:	50.2					
	Max:	293	PO/St	5-10	2.9		
	Average:	133.5					
	Max:	10.2	Slight PO	10-12	1.8		
	Average:	6.1					
WGQ21	Max:	1.9	St	0-5	3.3	10.6	9
	Average:	1.9					
	Max:	1.4	St to 5.75 ft; slight PO at 7.6 ft	5-10	3.8		
	Average:	1.25					
	Max:	3.5	Slight PO to 11 ft	10-12	1.2		
	Average:	3.5					
WGQ22	Max:	4.9	N/O, N/S	0-5	3.2	7.5	2.5
	Average:	3.55					
	Max:	343.9	Strong PO/St	5-10	3.3		
	Average:	174.7					
	Max:	21.5	Strong PO/St	10-12	1.2		
	Average:	21.5					
WGQ23	Max:	37.5	N/O, N/S	0-5	3.25	6.6	2
	Average:	20.6					
	Max:	316.4	Strong PO to 6.8 ft	5-10	3.2		
	Average:	273.1					
WGQ24	Max:	518	Moderate PO/Sh	0-5	3.25	6.0	1
	Average:	260.75					
	Max:	547	Moderate PO/Sh to 7.6 ft	5-10	3.2		
	Average:	309.65					
WGQ25	Max:	548	Strong PO/St	0-5	2.5	8.5	1.5
	Average:	276.35					
	Max:	603.8	Strong PO/St to 7.7 ft	5-10	4.2		
	Average:	600.9					
	Max:	421.5	N/O, N/S	10-12	2.0		
	Average:	421.5					
WGQ26	Max:	91.8	Slight PO/St	0-5	3.7	6.3	7.5
	Average:	47.75					
	Max:	572	Strong PO/ST	5-10	4.3		
	Average:	435.9					
	Max:	13.4	N/O, N/S	10-12	2.0		
	Average:	13.4					

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Western Grid							
Boring Number	OVA Reading (ppm)		Observations[2]	Depth (ft)	Recovery (ft)	Soil Sample Depth (ft)	Approx.[3] Water Table Depth (ft)
WGQ27	Max:	3.2	N/O, N/S	0-5	3.4	6.5	2.5
	Average:	3.15					
	Max:	433.5	Strong PO/St/Sh	5-10	3.8		
	Average:	228.25					
	Max:	8.9	Mild PO	10-12	1.5		
	Average:	8.9					
WGQ28	Max:	4.2	Mild PO	0-5	3.3	1.0	1.5
	Average:	3.45					
	Max:	2.6	Moderate PO/St/Sh	5-10	5.0		
	Average:	2.55					
	Max:	2.4	Moderate PO/St/Sh	10-12	1.0		
	Average:	2.4					
WGQ29	Max:	3.0	N/O, N/S	0-5	2.75	6.0	2.5
	Average:	2.6					
	Max:	6.3	Slight St to 8.5 ft	5-10	4.5		
	Average:	4.5					
	Max:	[1]	Slight PO	12-Oct	0.6		
	Average:	[1]					
WGR21	Max:	6.0	N/O, N/S	0-5	3.3	2.5	1.5
	Average:	5.4					
	Max:	5.6	N/O, N/S	5-10	4.0		
	Average:	5.6					
WGR22	Max:	4.5	St to 2.1 ft	0-5	3.3	5.5	8
	Average:	4.35					
	Max:	504.3	Strong PO/Some St	5-10	3.8		
	Average:	255.05					
	Max:	183.4	Strong PO to 10.5 ft	10-12	1.2		
	Average:	183.4					
WGR23	Max:	9.18	St	0-5	3.1	6.5	5
	Average:	7.54					
	Max:	547	Strong PO/St to 7 ft	5-10	4.0		
	Average:	515.65					
WGR24	Max:	344.3	Moderate PO/St/Sh	0-5	2.6	9.0	1
	Average:	173.65					
	Max:	628.3	Moderate to Strong PO/Sh	5-10	5.0		
	Average:	451.9					
	Max:	253.4	Strong PO	10-12	1.2		
	Average:	253.4					
WGR25	Max:	373.1	Moderate PO/Sh	0-5	2.5	6.0	1.5
	Average:	188.65					
	Max:	535.4	Moderate PO/Sh to 6.2 ft	5-10	5.0		
	Average:	527.35					
WGR26	Max:	268.7	Mild PO/St/Sh	0-5	2.9	9.0	1
	Average:	135.7					
	Max:	683.3	Mild PO/St/Sh to 7.5 ft	5-10	4.2		
	Average:	489.3					
	Max:	[1]	N/O, N/S	10-12	1		
	Average:	[1]					
WGR27	Max:	426.8	Mild PO	0-5	3.1	6.0	1
	Average:	214					
	Max:	490.5	Moderate to Strong PO/St	5-10	3.6		
	Average:	283.3					
	Max:	82.7	Strong PO/St to 10.6 ft	10-12	1.2		
	Average:	82.7					

TABLE 3
SUMMARY OF OVA READINGS AND OBSERVATIONS - WESTERN GRID
Area 29 Remediation Enhancement Investigation
FAA William J. Hughes Technical Center

Western Grid							
Boring Number	OVA Reading (ppm)		Observations[2]	Depth (ft)	Recovery (ft)	Soil Sample Depth (ft)	Approx.[3] Water Table Depth (ft)
WGR28	Max:	1.3	N/O, N/S (septage odor 1.5 to 2.8 ft)	0-5	2.8	6.0	1.5
	Average:	1.05					
	Max:	8.8	Strong PO/St/Sh	5-10	4.6		
	Average:	7.0					
	Max:	2.6	[no description]	10-12	0.7		
	Average:	2.6					
WGR29	Max:	4.7	N/O, N/S	0-5	3.25	2.5	1
	Average:	3.7					
	Max:	2.4	N/O, N/S	5-10	2.75		
	Average:	2.4					
WGS21	Max:	4.2	N/O, N/S	0-5	3.3	1.0	1
	Average:	2.1					
	Max:	0.0	N/O, N/S	5-10	4.1		
	Average:	0.0					
	Max:	0.0	N/O, N/S	10-12	0.8		
	Average:	0.0					
WGS22	Max:	6.7	N/O, N/S	0-5	2.3	8.5	8
	Average:	6.0					
	Max:	9.5	N/O, N/S	5-10	3.9		
	Average:	8.0					
	Max:	7.0	N/O, N/S	10-12	0.8		
	Average:	7.0					
WGS23	Max:	7.4	N/O, N/S	0-5	3.1	10.5	10
	Average:	6.95					
	Max:	497.5	N/O, N/S	5-10	3.1		
	Average:	254.3					
	Max:	580	Strong PO/Sh	10-12	1.0		
	Average:	580					
WGS24	Max:	25.4	Mild PO/St	0-5	2.0	6.5	0.5
	Average:	18.3					
	Max:	407.9	Mild to Strong PO/St to 7.1 ft	5-10	3.5		
	Average:	267.9					
WGS25	Max:	342.2	Slight to Moderate PO/St	0-5	3.2	6.0	NN
	Average:	180.15					
	Max:	581.2	Moderate PO/St	5-10	1.7		
	Average:	545.75					
	Max:	222.8	Moderate PO/St	10-12	1.9		
	Average:	222.8					
WGS26	Max:	259.2	Mild PO/St	0-5	3.5	6.0	5
	Average:	133.45					
	Max:	344.5	Strong PO/St/Sh	5-10	4.0		
	Average:	207.85					
	Max:	86.8	Strong PO/St/Sh	10-12	2.0		
	Average:	86.8					
WGS27	Max:	164	Mild PO	0-5	3.1	6.0	1.5
	Average:	91.8					
	Max:	356.8	Strong PO/Sh	5-10	3.5		
	Average:	198.85					
	Max:	14.3	Strong PO/Sh	10-12	1.0		
	Average:	14.3					
WGS28	Max:	120.6	Mild PO/St/Sh	0-5	3.3	7.0	1
	Average:	65.15					
	Max:	235.4	Mild PO/St/Sh to 7.2 ft	5-10	4.3		
	Average:	157.35					

TABLE 3
SUMMARY OF OVA READINGS AND OBSERVATIONS - WESTERN GRID
Area 29 Remediation Enhancement Investigation
FAA William J. Hughes Technical Center

Western Grid							
Boring Number	OVA Reading (ppm)		Observations[2]	Depth (ft)	Recovery (ft)	Soil Sample Depth (ft)	Approx.[3] Water Table Depth (ft)
WGS29	Max:	169.8	Mild PO	0-5	3.4	2.3	1
	Average:	90.75					
	Max:	12.7	Mild PO	5-10	4.5		
	Average:	11.65					
	Max:	10.4	Mild PO	10-12	1.0		
	Average:	10.4					
WGT21	Max:	3.5	N/O, N/S	0-5	3.2	10.5	2
	Average:	3.45					
	Max:	3.2	N/O, N/S	5-10	2.9		
	Average:	2.65					
	Max:	3.8	N/O, N/S	10-12	0.7		
	Average:	3.8					
WGT22	Max:	6.0	N/O, N/S	0-5	3.1	7.5	6.5
	Average:	4.5					
	Max:	179.9	Strong PO starting at 6.7 ft	5-10	3.0		
	Average:	92.4					
	Max:	7.8	Mild PO	10-12	0.9		
	Average:	7.8					
WGT23	Max:	3.6	N/O, N/S	0-5	2.9	7.5	2.5
	Average:	3.15					
	Max:	328.8	Strong PO/Sh	5-10	3.75		
	Average:	166.9					
	Max:	[1]	N/O, N/S	10-12	0.8		
	Average:	[1]					
WGT24	Max:	4.5	N/O, N/S	0-5	2.7	7.5	1.5
	Average:	3.65					
	Max:	605.1	Strong PO starting at 5.8 ft	5-10	2.9		
	Average:	493.25					
	Max:	12.9	[no description]	10-12	[3]		
	Average:	12.9					
WGT25	Max:	189.7	Mild PO	0-5	3.3	6.5	0.5
	Average:	97.55					
	Max:	521.8	Mild PO to 7 ft	5-10	3.6		
	Average:	346.65					
WGT26	Max:	528	Strong PO/St/Sh	0-5	4.2	6.5	0.5
	Average:	269.35					
	Max:	682	Strong PO/St/Sh	5-10	3.75		
	Average:	378.9					
	Max:	29.8	Strong PO/St/Sh	10-12	0.8		
	Average:	29.8					
WGT27	Max:	295.8	Mild PO/St/Sh	0-5	3.5	6.5	1
	Average:	149.25					
	Max:	682.5	Mild PO/St/Sh to 8 ft	5-10	5.0		
	Average:	351.05					
	Max:	12.8	N/O, N/S	10-12	0.8		
	Average:	12.8					
WGT28	Max:	2.2	N/O, N/S	0-5	4.0	6.0	1
	Average:	2.05					
	Max:	49.5	Moderate PO	5-10	3.8		
	Average:	27.8					
	Max:	3.6	Moderate PO	10-12	1.0		
	Average:	3.6					
WGT29	Max:	1.9	Mild PO	0-5	3.1	6.0	1
	Average:	1.75					
	Max:	15.7	Strong PO/Sh	5-10	3.3		
	Average:	9.7					
	Max:	2.9	[no description]	10-12	[3]		
	Average:	2.9					

TABLE 3
SUMMARY OF OVA READINGS AND OBSERVATIONS - WESTERN GRID
Area 29 Remediation Enhancement Investigation
FAA William J. Hughes Technical Center

Western Grid							
Boring Number	OVA Reading (ppm)		Observations[2]	Depth (ft)	Recovery (ft)	Soil Sample Depth (ft)	Approx.[3] Water Table Depth (ft)
WGU21	Max:	4.2	N/O, N/S	0-5	3.75	3.0	2.5
	Average:	3.65					
	Max:	3.4	N/O, N/S	5-10	3.0		
	Average:	3.05					
WGU22	Max:	3.2	N/O, N/S	0-5	2.75	10.5	NN
	Average:	2.95					
	Max:	3.2	N/O, N/S	5-10	4.0		
	Average:	3.05					
	Max:	4.4	N/O, N/S	10-12	0.75		
	Average:	4.4					
WGU23	Max:	3.2	N/O, N/S	0-5	2.75	6.6	0.5
	Average:	3.1					
	Max:	33.2	Mild PO to 7.3 ft	5-10	3.1		
	Average:	17.95					
	Max:	22	Mild PO to 10.75 ft	10-12	0.9		
	Average:	22					
WGU24	Max:	4.4	N/O, N/S	0-5	3.25	10.5	1.5
	Average:	3.75					
	Max:	6.5	Mild to Strong PO/Sh	5-10	2.75		
	Average:	5.7					
	Max:	7.9	Strong PO/Sh	10-12	0.8		
	Average:	7.9					
WGU25	Max:	3.3	N/O, N/S	0-5	2.9	10.5	1.5
	Average:	2.9					
	Max:	2.5	Slight PO/St	5-10	4.4		
	Average:	2.45					
	Max:	4.7	Slight PO	10-12	0.7		
	Average:	4.7					
WGU26	Max:	4.2	N/O, N/S	0-5	3.25	7.0	5.5
	Average:	3.4					
	Max:	23.7	Strong PO/Sh	5-10	3.9		
	Average:	14.35					
	Max:	8.0	Strong PO/Sh	10-12	1.5		
	Average:	8.0					
WGU27	Max:	110.7	Moderate PO/St/Sh	0-5	3.0	7.6	0.5
	Average:	57.2					
	Max:	560	Moderate to Strong PO/Sh	5-10	5.0		
	Average:	286.85					
	Max:	7.3	Strong PO/Sh to 10.3 ft	10-12	0.8		
	Average:	7.3					
WGU28	Max:	66.5	Moderate PO/St	0-5	2.8	2.0	0.25
	Average:	36.9					
	Max:	11.7	Moderate PO/St	5-10	5.0		
	Average:	9.8					
	Max:	5.8	Moderate PO/St	10-12	1.3		
	Average:	5.8					
WGU29	Max:	181.7	Mild to Strong PO/St/Sh	0-5	3.2	3.0	0.25
	Average:	93.45					
	Max:	10.8	Strong PO/St/Sh to 7.8 ft	5-10	3.1		
	Average:	8.95					

[1] No measurements were made from the lowest sample interval (10 to 12 feet).

[2] PO = petroleum odor; St = staining; Sh = sheen; N/O = no odor; N/S = no staining

[3] Recovery not noted.

NA = Not applicable (no sample collected for analysis)

NM = Not measured (no sample collected for observation)

NN = Not noted (moisture content of soil not noted)

[3] Approximate water table depth is estimated based on soil moisture content observations and does not necessarily reflect actual water table.

All depths are in feet below ground surface.

TABLE 4

GEOPROBE GROUNDWATER SAMPLING INFORMATION

Area 29 Remediation Enhancement Investigation

FAA William J. Hughes Technical Center

SAMPLE ID	SAMPLE DATE	SAMPLE DEPTH (FEET BGS)[1]	OBSERVATIONS	WATER QUALITY INDICATOR PARAMETERS AT TIME OF SAMPLING				
				pH (Standard Units)	TEMPERATURE (° CELSIUS)	SPECIFIC CONDUCTIVITY (mS/cm)[2]	OXIDATION-REDUCTION POTENTIAL (millivolts)	DISSOLVED OXYGEN (mg/L)[3]
29-EG-G13GW (4.5-8.5)	04/01/14	4.5-8.5		6.50	7.83	0.413	-115	5.73
29-EG-G15GW(4-8)	04/01/14	4-8	Strong PO[4]	6.90	8.59	0.402	-37	3.67
29-EG-G15GW (14-18)	04/01/14	4-8	Strong PO	Duplicate of sample 29-EG-G15GW(4-8)				
29-EG-G17GW (7-11)	04/01/14	7-11	Strong PO	6.77	8.51	0.968	-136	3.94
29-EG-H17GW (5-9)	04/01/14	5-9	Strong PO	6.77	7.93	0.944	-121	0.93
29-EG-I15GW (5-9)	04/01/14	5-9	Strong PO/Sheen	6.42	7.93	0.530	-59.0	1.67
29-WG-Q23GW (5.5-9.5)	04/01/14	5.5-9.5	Strong PO	5.91	9.60	0.147	-25	0.71
29-WG-Q24GW (4.5-8.5)	04/01/14	4.5-8.5	Strong PO	6.01	9.68	0.272	-18	3.13
29-WG-Q25GW (5-9)	04/01/14	5-9	Strong PO	6.11	9.91	0.286	-39	1.18
29-WG-Q26GW (5-9)	04/01/14	5-9	Strong PO	6.15	8.72	0.308	-71	0.65
29-WG-R23GW (5.5-9.5)	04/01/14	5.5-9.5	Strong PO	5.77	10.33	0.171	-7	1.02
29-WG-R24GW (8.5-12.5)	04/01/14	8.5-12.5	Strong PO/Sheen	5.75	7.93	0.156	17	4.58
29-WG-R26GW (6.5-10.5)	04/01/14	6.5-10.5	Strong PO/Sheen	6.13	9.16	0.437	-29	5.50
29-WG-S24GW (4.5-8.5)	04/01/14	4.5-8.5	Strong PO	6.51	12.40	0.365	-77	1.94
29-WG-S26GW (5-9)	04/01/14	5-9	Strong PO	6.20	10.24	0.463	-60	2.82

Notes: 1) Feet BGS = Feet below ground surface
2) mS/cm = millisiemens per centimeter
3) mg/L = milligrams per Liter
4) PO = Petroleum odor

TABLE 5
SUMMARY OF PRE-TREATMENT AND POST-TREATMENT SOIL SAMPLE RESULTS
Area 29 Remedial Enhancement Investigation
FAA William J. Hughes Technical Center

	Comparison Criteria			Pre-Treatment Results			Post-Treatment Results			
Sample ID				29-GP-BT4	29-GP-BT6	29-GP-BT7	29-GPBT4(5-6')	29-GPBT6(6-8')	29-GPBT7(5-7')	29-GPBT7(15-17')
Sampling Date	NJ Residential Soil Standard	NJ Non-Residential Soil Standard	NJ Impact to Groundwater Screening Level (Nov 2013)	4/7/2010	4/7/2010	4/7/2010	02/14/14	2/14/2014	2/14/2014	2/14/2014
Matrix				Soil	Soil	Soil	Soil	Soil	Soil	Duplicate of 29-GPBT7 (5-7')
Dilution Factor				1000/5 (GRO/DRO)	1000/25 (GRO/DRO)	50/20 (GRO/DRO)	1	100	1	1
VOA-8260C-SOIL				Not Analyzed	Not Analyzed	Not Analyzed	Result Q	Result Q	Result Q	Result Q
2-Butanone	3,100	44,000	0.9				0.0022 J	0.88 U	0.0042 U	0.0045 U *
Acetone	70,000	NA	19				0.015 B	0.88 U	0.01 B	0.013 B
Benzene	2	5	0.005				0.0027	0.36	0.00084 U	0.00089 U
Carbon disulfide	7,800	110,000	6				0.00049 J	0.18 U	0.00084 U	0.00089 U
Cyclohexane	NA	NA	NA				0.073	31	0.00084 U	0.00089 U
Ethylbenzene	7,800	110,000	13				0.045	13	0.00084 U	0.00089 U
Isopropylbenzene	NA	NA	NA				0.0059	3.9	0.00084 U	0.00089 U
Methylcyclohexane	NA	NA	NA				0.18	72	0.00026 J	0.00089 U
Toluene	6,300	91,000	7				0.00062 J	0.18 U	0.00084 U	0.00089 U
Xylenes, Total	12,000	170,000	19				0.0013 J	**58**	0.0017 U	0.0018 U
Total VOC Concentration	NA	NA	NA				0.32621	178.26	0.01111	0.01339
GRO/DRO (SEE NOTE FOR METHODS)				Result Q	Result Q	Result Q				
GRO				260	740	24	2.4	800	2.3 U	2.4 U
DRO (C10-C44)				460	2,300	1,600	0.028	1.4	0.054	0.095

2010 soil samples were analyzed for GRO/DRO using SW846 methods 5035/5030; 2014 soil samples were analyzed for GRO/DRO using SW846 method 8015D

Only detected analytes are listed.

All results and comparison criteria in milligrams per kilogram (mg/kg) or parts per million (ppm).

Highlighted concentrations shown in bold type face exceed limits.

The 10,000 parts per million soil cleanup standard established in the Record of Decision was not exceeded in any of the samples.

B : The analyte was found in an associated blank, as well as in the sample.

J : Indicates an estimated value.

U : Analyzed for but not detected.

U * : LCS or LCSD exceeds the control limits.

TABLE 6
EASTERN GRID SOIL SAMPLE RESULTS
Area 29 Remedial Enhancement Investigation
FAA William J. Hughes Technical Center

Sample ID	NJ Residential	NJ Non-Residential	NJ Impact to	29-EGF11(0.16')		29-EGF12(1.5')		29-EGF13(6.5')		29-EGF14(8')		29-EGF15(1.5')		29-EGF16(6')	
Sample Depth[1]	Soil Remediation	Soil Remediation	GW Soil												
Sampling Date	Standard	Standard	Screening	2/11/2014		2/11/2014		2/11/2014		2/11/2014		2/11/2014		2/11/2014	
Matrix			Level Nov 2013	Soil		Soil		Soil		Soil		Soil		Soil	
Dilution Factor				1		200		250		500		50		50	
VOA-8260C-SOIL				Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
SOIL BY 8260C															
1,1,1-Trichloroethane	290	4,200	0.3	0.00086	U	0.34	U	0.44	U	0.97	U	0.084	U	0.085	U
1,1,2,2-Tetrachloroethane	1	3	0.007	0.00086	U	0.34	U	0.44	U	0.97	U	0.084	U	0.085	U
2-Butanone	3,100	44,000	0.9	0.0013	J	1.7	U	2.2	U	4.9	U	0.42	U	0.43	U
Acetone	70,000	NA	19	0.013	B	1.7	U	2.2	U	4.9	U	0.42	U	0.43	U
Benzene	2	5	0.005	0.00086	U	0.34	U	0.44	U	**0.22**	J	0.084	U	**0.26**	
Carbon disulfide	7,800	110,000	6	0.00086	U	0.34	U	0.44	U	0.97	U	0.084	U	0.085	U *
Cyclohexane	NA	NA	NA	0.00058	J	0.34	U	54		84		0.084	U	12	
Ethylbenzene	7,800	110,000	13	0.00086	U	3.3		7.6		1.6		0.012	J	5.1	
Isopropylbenzene	NA	NA	NA	0.00086	U	2.4		4.6		18		0.018	J	1.6	
Methyl acetate	78,000	NA	22	0.0033	J	1.7	U	2.2	U	4.9	U	0.42	U	0.43	U
Methylcyclohexane	NA	NA	NA	0.0017		88		180		330		0.24		41	
Toluene	6,300	91,000	7	0.00086	U	0.34	U	0.44	U	0.97	U	0.084	U	0.085	U
Xylenes, Total	12,000	170,000	19	0.0017	U	0.46	J	0.89	U	1.9	U	0.031	J	0.17	U
Total VOC Concentration	NA	NA	NA	0		94.16		246.2		433.82		0.301		59.96	
Total BTEX Concentration	NA	NA	NA	ND		3.76		7.6		1.82		0.043		5.36	

All concentrations in milligrams per kilogram (mg/kg or ppm).
Highlighted concentrations shown in bold type face exceed limits.
B : The analyte was found in an associated blank, as well as in the sample.
J : Indicates an estimated value.
U : Analyzed for but not detected.
U * : LCS or LCSD exceeds the control limits
NA : Not applicable
ND : Not detected

[1] Sample depths are noted only in those cases where the actual sample depth differs from the depth indicated in the sample ID..

TABLE 6
EASTERN GRID SOIL SAMPLE RESULTS
Area 29 Remedial Enhancement Investigation
FAA William J. Hughes Technical Center

Sample ID	NJ Residential	NJ Non-Residential	NJ Impact to	29-EGF17(6')		29-EGG11(1.5')		29-EGG12(6')		29-EGG13(6.5')		29-EGG14(6')		29-EGG15(6')	
Sample Depth[1]	Soil Remediation	Soil Remediation	GW Soil												
Sampling Date	Standard	Standard	Screening	2/11/2014		2/11/2014		2/11/2014		2/11/2014		2/11/2014		2/11/2014	
Matrix			Level Nov 2013	Soil		Soil		Soil		Soil		Soil		Soil	
Dilution Factor				100		1		50		500		500		500	
VOA-8260C-SOIL				Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
SOIL BY 8260C															
1,1,1-Trichloroethane	290	4,200	0.3	0.18	U	0.0011	U	0.095	U	1.1	U	0.9	U	0.86	U
1,1,2,2-Tetrachloroethane	1	3	0.007	0.18	U	0.0011	U	0.095	U	1.1	U	0.9	U	0.86	U
2-Butanone	3,100	44,000	0.9	0.9	U	0.0053	U	0.48	U	5.4	U	4.5	U	4.3	U
Acetone	70,000	NA	19	0.9	U	0.014	B	0.48	U	5.4	U *	4.5	U *	4.3	U *
Benzene	2	5	0.005	**0.38**		0.0011	U	0.095	U	1.1	U	0.9	U	0.86	U
Carbon disulfide	7,800	110,000	6	0.18	U *	0.0011	U	0.095	U *	1.1	U	0.9	U	0.86	U
Cyclohexane	NA	NA	NA	11		0.0007	J	3.3		53		47		54	
Ethylbenzene	7,800	110,000	13	10		0.00027	J	2.3		**18**		0.74	J	**14**	
Isopropylbenzene	NA	NA	NA	5		0.0011	U	0.99		13		6.1		10	
Methyl acetate	78,000	NA	22	0.9	U	0.0053	U	0.48	U	5.4	U	4.5	U	4.3	U
Methylcyclohexane	NA	NA	NA	61		0.0029		15		240		170		210	
Toluene	6,300	91,000	7	0.18	U	0.00017	J	0.095	U	1.1	U	0.9	U	0.86	U
Xylenes, Total	12,000	170,000	19	0.36	U	0.0021	U	1.8		2	J	1.8	U	9.8	
Total VOC Concentration	NA	NA	NA	87.38		0.00404		23.39		326		223.84		297.8	
Total BTEX Concentration	NA	NA	NA	10.38		0.00044		4.1		20		0.74		23.8	

All concentrations in milligrams per kilogram (mg/kg or ppm).
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TABLE 6
EASTERN GRID SOIL SAMPLE RESULTS
Area 29 Remedial Enhancement Investigation
FAA William J. Hughes Technical Center

Sample ID	NJ Residential	NJ Non-Residential	NJ Impact to	29-EGG16(3')		29-EGG17(9')		29-EGH11(8')		29-EGH12(2.5')		29-EGH13(3')		29-EGH14(6')	
Sample Depth[1]	Soil Remediation	Soil Remediation	GW Soil												
Sampling Date	Standard	Standard	Screening	2/11/2014		2/11/2014		2/11/2014		2/11/2014		2/11/2014		2/11/2014	
Matrix			Level Nov 2013	Soil		Soil		Soil		Soil		Soil		Soil	
Dilution Factor				50		200		1		50		50		50	
VOA-8260C-SOIL				Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
SOIL BY 8260C															
1,1,1-Trichloroethane	290	4,200	0.3	0.08	U	0.39	U	0.00088	U	0.054	J	0.087	U	0.12	U
1,1,2,2-Tetrachloroethane	1	3	0.007	0.08	U	0.39	U	0.00088	U	**0.96**		0.087	U	0.12	U
2-Butanone	3,100	44,000	0.9	0.4	U	1.9	U	0.0029	J	0.47	U	0.43	U	0.58	U
Acetone	70,000	NA	19	0.4	U	1.9	U *	0.046	B	0.47	U	0.43	U	0.58	U
Benzene	2	5	0.005	**0.092**		**0.7**		0.00088	U	0.094	U	0.087	U	0.12	U
Carbon disulfide	7,800	110,000	6	0.08	U *	0.39	U	0.00043	J	0.094	U	0.087	U	0.12	U
Cyclohexane	NA	NA	NA	2.3		27		0.00026	J	4.5		4.8		5.6	
Ethylbenzene	7,800	110,000	13	0.44		**15**		0.00088	U	1.5		0.087	U	0.12	U
Isopropylbenzene	NA	NA	NA	0.25		7.6		0.00088	U	2.7		0.48		1.3	
Methyl acetate	78,000	NA	22	0.4	U	1.9	U	0.0044	U	0.47	U	0.43	U	0.58	U
Methylcyclohexane	NA	NA	NA	7.1		140		0.00031	J	34		15		22	
Toluene	6,300	91,000	7	0.08	U	0.39	U	0.00088	U	0.094	U	0.087	U	0.12	U
Xylenes, Total	12,000	170,000	19	0.049	J	0.51	J	0.0018	U	5.7		0.17	U	0.23	U
Total VOC Concentration	NA	NA	NA	10.231		190.81		0.0039		49.414		20.28		28.9	
Total BTEX Concentration	NA	NA	NA	0.581		16.21		ND		7.2		ND		ND	

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TABLE 6
EASTERN GRID SOIL SAMPLE RESULTS
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FAA William J. Hughes Technical Center

Sample ID	NJ Residential	NJ Non-Residential	NJ Impact to	29-EGH15(2')		29-EGH16(6')		29-EGH17(4.5')		29-EGI11(6')		29-EGI12(2.5')		29-EGI13(13')	
Sample Depth[1]	Soil Remediation	Soil Remediation	GW Soil											8.0 ft	
Sampling Date	Standard	Standard	Screening	2/11/2014		2/11/2014		2/11/2014		2/11/2014		2/11/2014		2/11/2014	
Matrix			Level Nov 2013	Soil		Soil		Soil		Soil		Soil		Soil	
Dilution Factor				100		500		100		50		1		1	
VOA-8260C-SOIL				Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
SOIL BY 8260C															
1,1,1-Trichloroethane	290	4,200	0.3	0.21	U	1	U	0.18	U	0.085	U	0.00082	U	0.00091	U
1,1,2,2-Tetrachloroethane	1	3	0.007	0.21	U	1	U	0.18	U	0.085	U	0.00082	U	0.00091	U
2-Butanone	3,100	44,000	0.9	1	U	5.2	U	0.88	U	0.42	U	0.0034	J	0.0031	J
Acetone	70,000	NA	19	1	U	5.2	U	0.88	U	0.42	U	0.038	B	0.041	B
Benzene	2	5	0.005	0.21	U	**0.5**	J	**0.81**		0.085	U	0.00035	J	0.0039	
Carbon disulfide	7,800	110,000	6	0.21	U *	1	U *	0.18	U *	0.085	U	0.00021	J	0.00073	J
Cyclohexane	NA	NA	NA	23		73		16		0.089		0.0044		0.05	
Ethylbenzene	7,800	110,000	13	0.55		5.3		0.15	J	0.038	J	0.00082	U	0.0008	J
Isopropylbenzene	NA	NA	NA	0.66		18		3.1		0.12		0.0026		0.013	
Methyl acetate	78,000	NA	22	1	U	5.2	U	0.88	U	0.42	U	0.0041	U	0.0046	U
Methylcyclohexane	NA	NA	NA	52		300		49		0.17		0.0053		0.11	
Toluene	6,300	91,000	7	0.21	U	1	U	0.18	U	0.085	U	0.00082	U	0.00042	J
Xylenes, Total	12,000	170,000	19	0.24	J	2.1	U	0.077	J	0.17	U	0.0016	U	0.0018	U
Total VOC Concentration	NA	NA	NA	76.45		396.8		69.137		0.417		0.01626		0.18195	
Total BTEX Concentration	NA	NA	NA	0.79		5.8		1.037		0.038		0.00035		0.00512	

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EASTERN GRID SOIL SAMPLE RESULTS
Area 29 Remedial Enhancement Investigation
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Sample ID	NJ Residential	NJ Non-Residential	NJ Impact to	29-EGI14(9.6')		29-EGI14(19.6')		29-EGI15(3')		29-EGI16		29-EGI17(17.5')	
Sample Depth[1]	Soil Remediation	Soil Remediation	GW Soil							1.25 ft		12.5 ft	
Sampling Date	Standard	Standard	Screening	2/11/2014		2/11/2014		2/11/2014		2/11/2014		2/11/2014	
Matrix			Level Nov 2013	Soil		Duplicate of 29-EGI14(9.6')		Soil		Soil		Soil	
Dilution Factor				1		1		200		1		50	
VOA-8260C-SOIL				Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
SOIL BY 8260C													
1,1,1-Trichloroethane	290	4,200	0.3	0.001	U	0.00088	U	0.24	J	0.00084	U	0.062	U
1,1,2,2-Tetrachloroethane	1	3	0.007	0.001	U	0.00088	U	**1.5**		0.00084	U	0.062	U
2-Butanone	3,100	44,000	0.9	0.005	U	0.0044	U	2.3	U	0.0038	J	0.31	U
Acetone	70,000	NA	19	0.018	B	0.02		2.3	U	0.042		0.31	U
Benzene	2	5	0.005	0.001		0.0009		**0.23**	J	0.00047	J	**0.031**	J
Carbon disulfide	7,800	110,000	6	0.00015	J	0.00022	J	0.46	U	0.00084	U	0.062	U
Cyclohexane	NA	NA	NA	0.061		0.047		22		0.0036		0.13	
Ethylbenzene	7,800	110,000	13	0.001	U	0.00088	U	**14**		0.0076		0.062	U
Isopropylbenzene	NA	NA	NA	0.017		0.011		10		0.0033		0.091	
Methyl acetate	78,000	NA	22	0.005	U	0.0044	U	2.3	U	0.0042	U	0.31	U
Methylcyclohexane	NA	NA	NA	0.058		0.046		130		0.0036		0.6	
Toluene	6,300	91,000	7	0.00032	J	0.00088	U	0.46	U	0.00084	U	0.062	U
Xylenes, Total	12,000	170,000	19	0.002	U	0.0018	U	**26**		0.00074	J	0.12	U
Total VOC Concentration	NA	NA	NA	0.13747		0.12512		203.97		0.06511		0.852	
Total BTEX Concentration	NA	NA	NA	0.00132		0.0009		40.23		0.00881		0.031	

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TABLE 7
WESTERN GRID SOIL SAMPLE RESULTS
Area 29 Remedial Enhancement Investigation
FAA William J. Hughes Technical Center

Sample ID	NJ Residential	NJ Non Residential	NJ Impact to	29-WG-P26 (5.75)		29-WGQ21(10.6')		29-WGQ22(12.5')		29-WGQ23(6.6')		29-WGQ24(6')		29-WGQ25(8.5')	
Sample Depth[1]	Soil Remediation	Soil Remediation	GW Soil					7.5 ft							
Sampling Date	Standard	Standard	Screening	4/1/2014		2/12/2014		2/12/2014		2/12/2014		2/12/2014		2/12/2014	
Matrix			Level Nov 2013	Soil		Soil		Soil		Soil		Soil		Soil	
Dilution Factor				1		1		100		500		250		500	
VOA-8260C-SOIL				Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
2-Butanone	3,100	44,000	0.9	0.82	U	0.0045	U	0.94	U	5.7	U	2.5	U	5.1	U
Acetone	70,000	NA	19	0.82	U	0.024	B	0.94	U	5.7	U	2.5	U	5.1	U
Benzene	2	5	0.005	0.16	U	0.00023	J	**0.034**	J	1.1	U	0.5	U	**1**	
Carbon disulfide	7,800	110,000	6	0.16	U	0.0009	U	0.19	U	1.1	U	0.5	U	1	U
Cyclohexane	NA	NA	NA	5.7		0.0014		5.1		32		37		120	
Ethylbenzene	7,800	110,000	13	0.72		0.008		10		**54**		**17**		**61**	
Isopropylbenzene	NA	NA	NA	0.97		0.0034		5.3		23		9.4		19	
Methylcyclohexane	NA	NA	NA	23		0.0048		36		190		150		310	
Toluene	6,300	91,000	7	0.16	U	0.00014	J	0.19	U	1.1	U	0.5	U	1	U
Xylenes, Total	12,000	170,000	19	1.44		0.012		**48**		**260**		**100**		**260**	
Total VOC Concentration	NA	NA	NA	31.83		0.02997		104.434		559		313.4		771	
Total BTEX Concentration	NA	NA	NA	2.16		0.02037		58.034		314		117		322	

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WESTERN GRID SOIL SAMPLE RESULTS
Area 29 Remedial Enhancement Investigation
FAA William J. Hughes Technical Center

Sample ID	NJ Residential	NJ Non Residential	NJ Impact to	29-WGQ25(18.5')		29-WGQ26(6.3')		29-WGQ27(6.5')		29-WGQ28(1.0')		29-WGQ29(6.0')		29-WGR21(2.5')	
Sample Depth[1]	Soil Remediation	Soil Remediation	GW Soil												
Sampling Date	Standard	Standard	Screening	2/12/2014		2/12/2014		2/12/2014		2/12/2014		2/12/2014		2/12/2014	
Matrix			Level Nov 2013	Duplicate of 29-WGQ25(8.5')		Soil		Soil		Soil		Soil		Soil	
Dilution Factor				500		500		100		1		1		1	
VOA-8260C-SOIL				Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
2-Butanone	3,100	44,000	0.9	5.3	U	4.7	U	0.84	U	0.0048	U	0.0018	J	0.0045	U
Acetone	70,000	NA	19	5.3	U	4.7	U	0.84	U	0.0073	B	0.019	B	0.0045	U
Benzene	2	5	0.005	**1.1**		**0.28**	J	0.17	U	0.00096	U	0.001	U	0.0009	U
Carbon disulfide	7,800	110,000	6	1.1	U	0.93	U	0.17	U	0.00096	U	0.00025	J	0.0009	U
Cyclohexane	NA	NA	NA	150		62		1.7		0.00096	U	0.0015		0.0009	U
Ethylbenzene	7,800	110,000	13	**59**		**32**		0.95		0.00096	U	0.00046	J	0.0009	U
Isopropylbenzene	NA	NA	NA	17		11		2.2		0.00096	U	0.00046	J	0.0009	U
Methylcyclohexane	NA	NA	NA	310		170		15		0.00032	J	0.0045		0.00023	J
Toluene	6,300	91,000	7	0.35	J	0.33	J	0.17	U	0.00096	U	0.001	U	0.00017	J
Xylenes, Total	12,000	170,000	19	**240**		**130**		4.8		0.0019	U	0.0014	J	0.0018	U
Total VOC Concentration	NA	NA	NA	777.45		405.61		24.65		0.00032		0.01037		0.0004	
Total BTEX Concentration	NA	NA	NA	300.45		162.61		5.75		ND		0.00186		0.00017	

All concentrations in micrograms per kilogram (ug/kg or ppb).
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Area 29 Remedial Enhancement Investigation
FAA William J. Hughes Technical Center

Sample ID	NJ Residential	NJ Non Residential	NJ Impact to	29-WGR22(13.5')		29-WGR23(6.5')		29-WGR24(9.0')		29-WGR25(6.0')		29-WGR26(9.0')		29-WGR27(6.0')	
Sample Depth[1]	Soil Remediation	Soil Remediation	GW Soil	5.5 ft											
Sampling Date	Standard	Standard	Screening	2/12/2014		2/12/2014		2/12/2014		2/12/2014		2/12/2014		2/12/2014	
Matrix			Level Nov 2013	Soil		Soil		Soil		Soil		Soil		Soil	
Dilution Factor				100		250		200		200		1000		200	
VOA-8260C-SOIL				Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
2-Butanone	3,100	44,000	0.9	0.99	U	2.3	U	1.7	U	1.8	U	9.9	U	1.9	U
Acetone	70,000	NA	19	0.99	U	2.3	U	1.7	U	1.8	U	9.9	U	1.9	U
Benzene	2	5	0.005	**0.097**	J	**0.63**		**0.41**		**1.9**		**13**		**0.34**	J
Carbon disulfide	7,800	110,000	6	0.2	U	0.47	U	0.34	U	0.37	U	2	U	0.38	U
Cyclohexane	NA	NA	NA	19		35		39		28		280		26	
Ethylbenzene	7,800	110,000	13	10		**33**		**17**		**16**		**130**		6.8	
Isopropylbenzene	NA	NA	NA	2.8		9.3		4.4		4.5		35		3	
Methylcyclohexane	NA	NA	NA	57		160		96		50		560		68	
Toluene	6,300	91,000	7	0.2	U	0.47	U	0.16	J	0.13	J	0.82	J	0.38	U
Xylenes, Total	12,000	170,000	19	**47**		**140**		**66**		**57**		**490**		0.38	J
Total VOC Concentration	NA	NA	NA	135.897		377.93		222.97		157.53		1788.82		104.52	
Total BTEX Concentration	NA	NA	NA	57.097		173.63		83.57		75.03		633.82		7.52	

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Sample ID	NJ Residential	NJ Non Residential	NJ Impact to	29-WGR28(6.0')		29-WGR29(2.5')		29-WGR29(12.5')		29-WGS21(1.0')		29-WGS22(8.5')		29-WGS23(10.5')	
Sample Depth[1]	Soil Remediation	Soil Remediation	GW Soil												
Sampling Date	Standard	Standard	Screening	2/12/2014		2/12/2014		2/12/2014		2/12/2014		2/12/2014		2/12/2014	
Matrix			Level Nov 2013	Soil		Soil		Duplicate of 29-WGR29(2.5')		Soil		Soil		Soil	
Dilution Factor				1		1		1		1		1		100	
VOA-8260C-SOIL				Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
2-Butanone	3,100	44,000	0.9	0.0044	J	0.0048	U	0.0048	U	0.0048	U	0.0042	U	0.8	U
Acetone	70,000	NA	19	0.039	B	0.051	B	0.027	B	0.014	B	0.0058	B	0.8	U
Benzene	2	5	0.005	0.0002	J	0.00097	U	0.00097	U	0.00096	U	0.00084	U	0.16	U
Carbon disulfide	7,800	110,000	6	0.00023	J	0.00097	U	0.00097	U	0.00096	U	0.00084	U	0.16	U
Cyclohexane	NA	NA	NA	0.0069		0.00097	U	0.00097	U	0.00096	U	0.00084	U	13	
Ethylbenzene	7,800	110,000	13	0.0014		0.00097	U	0.00097	U	0.00096	U	0.00084	U	4.3	
Isopropylbenzene	NA	NA	NA	0.00096		0.00097	U	0.00097	U	0.00096	U	0.00084	U	1.9	
Methylcyclohexane	NA	NA	NA	0.014		0.00097	U	0.00097	U	0.00021	J	0.00018	J	42	
Toluene	6,300	91,000	7	0.00034	J	0.00097	U	0.00097	U	0.00019	J	0.00019	J	0.067	J
Xylenes, Total	12,000	170,000	19	0.0055		0.0019	U	0.0019	U	0.0019	U	0.0017	U	**23**	
Total VOC Concentration	NA	NA	NA	0.03393		ND		ND		0.0004		0.00037		84.267	
Total BTEX Concentration	NA	NA	NA	0.00744		ND		ND		0.00019		0.00019		27.367	

All concentrations in micrograms per kilogram (ug/kg or ppb).
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Sample ID	NJ Residential	NJ Non Residential	NJ Impact to	29-WGS24(6.5')		29-WGS25(6.0')		29-WGS26(6.0')		29-WGS27(6.0')		29-WGS28(7.0')		29-WGS29(2.3')	
Sample Depth[1]	Soil Remediation	Soil Remediation	GW Soil												
Sampling Date	Standard	Standard	Screening	2/12/2014		2/12/2014		2/12/2014		2/12/2014		2/12/2014		2/12/2014	
Matrix			Level Nov 2013	Soil		Soil		Soil		Soil		Soil		Soil	
Dilution Factor				250		200		50		50		50		1	
VOA-8260C-SOIL				Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
2-Butanone	3,100	44,000	0.9	2.1	U	1.9	U	0.47	U	0.59	U	0.42	U	0.0057	
Acetone	70,000	NA	19	2.1	U	1.9	U	0.47	U	0.59	U	0.42	U	0.043	B
Benzene	2	5	0.005	**0.08**	J	**0.1**	J	**0.28**		**0.082**	J	0.085	U	0.00075	J
Carbon disulfide	7,800	110,000	6	0.41	U	0.37	U	0.095	U	0.12	U	0.085	U	0.00026	J
Cyclohexane	NA	NA	NA	19		25		9.3		1.6		3.7		0.067	
Ethylbenzene	7,800	110,000	13	**19**		7.9		4.7		0.76		0.085	U	0.00092	U
Isopropylbenzene	NA	NA	NA	7.6		3.4		1.3		0.24		0.73		0.00044	J
Methylcyclohexane	NA	NA	NA	140		72		24		7.3		16		0.2	
Toluene	6,300	91,000	7	0.41	U	1.9		**7.3**		0.21		0.085	U	0.00018	J
Xylenes, Total	12,000	170,000	19	**83**		**35**		**27**		1.2		0.17	U	0.0018	U
Total VOC Concentration	NA	NA	NA	268.68		145.3		73.88		11.392		20.43		0.27433	
Total BTEX Concentration	NA	NA	NA	102.08		44.9		39.28		2.252		ND		0.00093	

All concentrations in micrograms per kilogram (ug/kg or ppb).
Highlighted concentrations shown in bold type face exceed limits
* : RPD of the LCS and LCSD exceeds the control limits
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J : Indicates an estimated value.
U : Analyzed for but not detected.
NA : Not applicable
ND : Not detected
[1] Sample depths are noted only in those cases where the actual sample depth differs from the depth indicated in the sample ID..

TABLE 7
WESTERN GRID SOIL SAMPLE RESULTS
Area 29 Remedial Enhancement Investigation
FAA William J. Hughes Technical Center

Sample ID	NJ Residential	NJ Non Residential	NJ Impact to	29-WGT21(10.5')		29-WGT22(7.5')		29-WGT23(7.5')		29-WGT24(7.5')		29-WGT24(17.5')		29-WGT25(6.5')	
Sample Depth[1]	Soil Remediation	Soil Remediation	GW Soil												
Sampling Date	Standard	Standard	Screening	2/14/2014		2/14/2014		2/14/2014		2/14/2014		2/14/2014		2/12/2014	
Matrix			Level Nov 2013	Soil		Soil		Soil		Soil		Duplicate of 29-WGT24(7.5')		Soil	
Dilution Factor				1		1		50		250		200		100	
VOA-8260C-SOIL				Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
2-Butanone	3,100	44,000	0.9	0.0039	U	0.0047	U	0.41	U	2.1	U	1.8	U	0.89	U
Acetone	70,000	NA	19	0.0066	B	0.02		0.41	U	2.1	U	1.8	U	0.89	U
Benzene	2	5	0.005	0.00078	U	0.00094	U	0.083	U	0.42	U	0.35	U	**0.025**	J
Carbon disulfide	7,800	110,000	6	0.00078	U	0.0074		0.083	U	0.42	U	0.35	U	0.18	U
Cyclohexane	NA	NA	NA	0.00078	U	0.00094	U	1		22		14		14	
Ethylbenzene	7,800	110,000	13	0.00078	U	0.00094	U	0.046	J	2.5		2.6		5.5	
Isopropylbenzene	NA	NA	NA	0.00078	U	0.003		0.98		1.9		1.5		3.6	
Methylcyclohexane	NA	NA	NA	0.00025	J	0.02		11		56		35		47	
Toluene	6,300	91,000	7	0.00015	J	0.00035	J	0.083	U	0.07	J	0.08	J	0.47	
Xylenes, Total	12,000	170,000	19	0.0016	U	0.0019	U	0.13	J	11		13		**37**	
Total VOC Concentration	NA	NA	NA	0.0004		0.05075		14.156		93.47		66.18		107.595	
Total BTEX Concentration	NA	NA	NA	0.00015		0.00035		0.176		13.57		15.68		42.995	

All concentrations in micrograms per kilogram (ug/kg or ppb).
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B : The analyte was found in an associated blank, as well as in the sample.
J : Indicates an estimated value.
U : Analyzed for but not detected.
NA : Not applicable
ND : Not detected
[1] Sample depths are noted only in those cases where the actual sample depth differs from the depth indicated in the sample ID..

TABLE 7
WESTERN GRID SOIL SAMPLE RESULTS
Area 29 Remedial Enhancement Investigation
FAA William J. Hughes Technical Center

Sample ID	NJ Residential	NJ Non Residential	NJ Impact to	29-WGT26(6.5')		29-WGT27(6.5')		29-WGT28(6.0')		29-WGT29(6.0')		29-WGU21(3.0')		29-WGU22(10.5')	
Sample Depth[1]	Soil Remediation	Soil Remediation	GW Soil												
Sampling Date	Standard	Standard	Screening	2/12/2014		2/12/2014		2/12/2014		2/12/2014		2/14/2014		2/14/2014	
Matrix			Level Nov 2013	Soil		Soil		Soil		Soil		Soil		Soil	
Dilution Factor				100		50		50		1		1		1	
VOA-8260C-SOIL				Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
2-Butanone	3,100	44,000	0.9	0.87	U	0.53	U	0.43	U	0.014	*	0.0047	U	0.0045	U
Acetone	70,000	NA	19	0.87	U	0.53	U	0.43	U	0.058	B	0.0088	B	0.0045	U
Benzene	2	5	0.005	**0.062**	J	0.11	U	0.085	U	0.0024		0.00094	U	0.0009	U
Carbon disulfide	7,800	110,000	6	0.17	U	0.11	U	0.085	U	0.00048	J	0.00094	U	0.0009	U
Cyclohexane	NA	NA	NA	11		3.7		0.18		0.12		0.00094	U	0.0009	U
Ethylbenzene	7,800	110,000	13	11		2		0.015	J	0.00096	U	0.00094	U	0.0009	U
Isopropylbenzene	NA	NA	NA	3.6		1.4		0.023	J	0.0019		0.00094	U	0.0009	U
Methylcyclohexane	NA	NA	NA	55		27		1.3		0.43		0.00016	J	0.0009	U
Toluene	6,300	91,000	7	0.17	U	0.11	U	0.085	U	0.00022	J	0.00017	J	0.0009	U
Xylenes, Total	12,000	170,000	19	**26**		0.13	J	0.17	U	0.0011	J	0.0019	U	0.0018	U
Total VOC Concentration	NA	NA	NA	106.662		34.23		1.698		0.5701		0.00033		ND	
Total BTEX Concentration	NA	NA	NA	37.062		2.13		0.015		0.00372		0.00017		ND	

All concentrations in micrograms per kilogram (ug/kg or ppb).
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J : Indicates an estimated value.
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TABLE 7
WESTERN GRID SOIL SAMPLE RESULTS
Area 29 Remedial Enhancement Investigation
FAA William J. Hughes Technical Center

Sample ID	NJ Residential	NJ Non Residential	NJ Impact to	29-WGU23(11.6')		29-WGU24(10.5')		29-WGU25(10.5')		29-WGU26(7.0')		29-WGU27(7.6')		29-WGU28(2.0')	
Sample Depth[1]	Soil Remediation	Soil Remediation	GW Soil	6.6 ft											
Sampling Date	Standard	Standard	Screening	2/14/2014		2/14/2014		2/14/2014		2/14/2014		2/14/2014		2/14/2014	
Matrix			Level Nov 2013	Soil		Soil		Soil		Soil		Soil		Soil	
Dilution Factor				1		1		1		1		50		50	
VOA-8260C-SOIL				Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
2-Butanone	3,100	44,000	0.9	0.0046	U	0.0051	U	0.003	J	0.0056		0.49	U	0.43	U
Acetone	70,000	NA	19	0.027		0.013	B	0.028	B	0.056	B	0.49	U	0.43	U
Benzene	2	5	0.005	0.00092	U	0.001	U	0.0033		0.00087	U	0.097	U	**0.024**	J
Carbon disulfide	7,800	110,000	6	0.00092	U	0.00091	J	0.00052	J	0.00034	J	0.097	U	0.087	U
Cyclohexane	NA	NA	NA	0.00092	U	0.036		0.047		0.028		0.097	U	1.4	
Ethylbenzene	7,800	110,000	13	0.00092	U	0.0042		0.054		0.0035		0.097	U	0.012	J
Isopropylbenzene	NA	NA	NA	0.00092	U	0.0025		0.0077		0.003		0.034	J	0.049	J
Methylcyclohexane	NA	NA	NA	0.00092	U	0.089		0.049		0.06		0.097	U	4.1	
Toluene	6,300	91,000	7	0.00092	U	0.00025	J	0.038		0.00029	J	0.097	U	0.087	U
Xylenes, Total	12,000	170,000	19	0.0018	U	0.011		0.22		0.0053		0.19	U	0.17	U
Total VOC Concentration	NA	NA	NA	0.027		0.14386		0.42252		0.10603		0.034		5.585	
Total BTEX Concentration	NA	NA	NA	ND		0.01545		0.3153		0.00909		ND		0.036	

All concentrations in micrograms per kilogram (ug/kg or ppb).
Highlighted concentrations shown in bold type face exceed limits
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J : Indicates an estimated value.
U : Analyzed for but not detected.
NA : Not applicable
ND : Not detected
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TABLE 7
WESTERN GRID SOIL SAMPLE RESULTS
Area 29 Remedial Enhancement Investigation
FAA William J. Hughes Technical Center

Sample ID	NJ Residential	NJ Non Residential	NJ Impact to	29-WGU29(3.0')	
Sample Depth[1]	Soil Remediation	Soil Remediation	GW Soil		
Sampling Date	Standard	Standard	Screening	2/14/2014	
Matrix			Level Nov 2013	Soil	
Dilution Factor				50	
VOA-8260C-SOIL				Result	Q
2-Butanone	3,100	44,000	0.9	0.44	U
Acetone	70,000	NA	19	0.44	U
Benzene	2	5	0.005	**0.027**	J
Carbon disulfide	7,800	110,000	6	0.087	U
Cyclohexane	NA	NA	NA	2.7	
Ethylbenzene	7,800	110,000	13	0.27	
Isopropylbenzene	NA	NA	NA	0.15	
Methylcyclohexane	NA	NA	NA	5	
Toluene	6,300	91,000	7	0.087	U
Xylenes, Total	12,000	170,000	19	0.034	J
Total VOC Concentration	NA	NA	NA	8.181	
Total BTEX Concentration	NA	NA	NA	0.331	

All concentrations in micrograms per kilogram (ug/kg or ppb).
Highlighted concentrations shown in bold type face exceed limits
* : RPD of the LCS and LCSD exceeds the control limits
B : The analyte was found in an associated blank, as well as in the sample.
J : Indicates an estimated value.
U : Analyzed for but not detected.
NA : Not applicable
ND : Not detected
[1] Sample depths are noted only in those cases where the actual sample depth differs from the depth indicated in the sample ID..

TABLE 8
GROUNDWATER SAMPLE RESULTS
Area 29 Remedial Enhancement Investigation
FAA William J. Hughes Technical Center

					EASTERN GRID LOCATIONS					
Sample ID	Federal	New Jersey	New Jersey	ROD-Based	29-EG-G13GW (4.5-8.5)	29-EG-G15GW(4-8)	29-EG-G15GW (14-18)	29-EG-G17GW (7-11)	29-EG-H17GW (5-9)	29-EG-I15GW (5-9)
Lab Sample ID	Maximum	Maximum	GWQS	Cleanup	460-73634-9	460-73634-4	460-73634-5	460-73634-6	460-73634-7	460-73634-8
Sampling Date	Contaminant	Contaminant		Criteria	4/1/2014	4/1/2014	4/1/2014	4/1/2014	4/1/2014	4/1/2014
Matrix	Level	Level			Water	Water	Duplicate of 29-EG-G15GW(4-8)	Water	Water	Water
Dilution Factor					5	5	5	5	5	5
VOA-8260C-WATER					Result Q	Result Q	Result Q	Result Q	Result Q	Result Q
1,1-Dichloroethane		50	50		5.0 U	5.0 U	5.0 U	5.8	4.7 J	5.0 U
1,1-Dichloroethene	7	2	1		5.0 U	5.0 U	5.0 U	**2.5** J	**2.3** J	5.0 U
2-Butanone (MEK)			300		25 U	25 U	25 U	25 U	25 U	25 U
4-Methyl-2-pentanone (MIBK)			NE		25 U	25 U	25 U	25 U	25 U	25 U
Acetone			6000		25 U	25 U	25 U	25 U	25 U	25 U
Benzene	5	1	1	1	0.60 J	5.0 U	5.0 U	**360**	**630**	**100**
Chloroethane			5		5.0 U	5.0 U	5.0 U	5.0 U	**33**	5.0 U
Cyclohexane			NE		480	650	450	460	510	610
Ethylbenzene	700		700	5	**680**	**820**	**430**	**220**	**440**	**1400**
Isopropylbenzene			700		150	130	85	130	160	190
Methylcyclohexane			NE		680	810	620	730	790	920
m-Xylene & p-Xylene	Total Xyl:10,000	Total Xyl:1000	2	Total Xyl: 2	**160**	**1700**	**1000**	**730**	**1600**	**270**
o-Xylene	Total Xyl:10,000	Total Xyl:1000	2	Total Xyl: 2	5.0 U	1.2 J	0.94 J	**120**	**130**	5.0 U
Toluene	1000		600	5	5.0 U	5.0 U	5.0 U	1.2 J	2.9 J	5.0 U
Total BTEX Concentration					840.6	2521.2	1430.94	1431.2	2802.9	1770

All concentrations in ug/L (parts per billion)
Highlighted concentrations in boldface type exceed limits.
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NE = Not Established

TABLE 8
GROUNDWATER SAMPLE RESULTS
Area 29 Remedial Enhancement Investigation
FAA William J. Hughes Technical Center

					WESTERN GRID LOCATIONS					
Sample ID	Federal	New Jersey	New Jersey	ROD-Based	29-WG-Q23GW (5.5-9.5)	29-WG-Q24GW (4.5-8.5)	29-WG-Q25GW (5-9)	29-WG-Q26GW (5-9)	29-WG-R23GW (5.5-9.5)	29-WG-R24GW (8.5-12.5)
Lab Sample ID	Maximum	Maximum	GWQS	Cleanup	460-73634-13	460-73634-12	460-73634-11	460-73634-10	460-73634-14	460-73634-18
Sampling Date	Contaminant	Contaminant		Criteria	4/1/2014	4/1/2014	4/1/2014	4/1/2014	4/1/2014	4/1/2014
Matrix	Level	Level			Water	Water	Water	Water	Water	Water
Dilution Factor					10	10	25	25	20	25
VOA-8260C-WATER					Result Q	Result Q	Result Q	Result Q	Result Q	Result Q
1,1-Dichloroethane		50	50		10 U	10 U	25 U	25 U	20 U	25 U
1,1-Dichloroethene	7	2	1		10 U	10 U	25 U	25 U	20 U	25 U
2-Butanone (MEK)			300		50 U	24 J	130 U	130 U	100 U	130 U
4-Methyl-2-pentanone (MIBK)			NE		50 U	23 J	130 U	130 U	100 U	130 U
Acetone			6000		190	170	130 U	130 U	100 U	130 U
Benzene	5	1	1	1	**2.6 J**	**13**	**230**	**110**	**120**	**870**
Chloroethane			5		10 U	10 U	25 U	25 U	20 U	25 U
Cyclohexane			NE		55	220	220	570	590	490
Ethylbenzene	700		700	5	**490**	**620**	**1300**	**1300**	**1500**	**1300**
Isopropylbenzene			700		140	150	160	200	140	120
Methylcyclohexane			NE		360	490	410	1100	840	660
m-Xylene & p-Xylene	Total Xyl:10,000	Total Xyl:1000	2	Total Xyl: 2	**2300**	**3600**	**4900**	**5200**	**5900**	**4600**
o-Xylene	Total Xyl:10,000	Total Xyl:1000	2	Total Xyl: 2	10 U	**8.9 J**	25 U	25 U	**1500**	**560**
Toluene	1000		600	5	10 U	**6.3 J**	**11 J**	25 U	**400**	**1000**
Total BTEX Concentration					2792.6	4248.2	6441	6610	9420	8330

All concentrations in ug/L (parts per billion)
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NE = Not Established

TABLE 8
GROUNDWATER SAMPLE RESULTS
Area 29 Remedial Enhancement Investigation
FAA William J. Hughes Technical Center

					WESTERN GRID LOCATIONS		
Sample ID	Federal	New Jersey	New Jersey	ROD-Based	29-WG-R26GW (6.5-10.5)	29-WG-S24GW (4.5-8.5)	29-WG-S26GW (5-9)
Lab Sample ID	Maximum	Maximum	GWQS	Cleanup	460-73634-17	460-73634-15	460-73634-16
Sampling Date	Contaminant	Contaminant		Criteria	4/1/2014	4/1/2014	4/1/2014
Matrix	Level	Level			Water	Water	Water
Dilution Factor					25	20	20
VOA-8260C-WATER					Result Q	Result Q	Result Q
1,1-Dichloroethane		50	50		25 U	20 U	20 U
1,1-Dichloroethene	7	2	1		25 U	20 U	20 U
2-Butanone (MEK)			300		130 U	100 U	100 U
4-Methyl-2-pentanone (MIBK)			NE		130 U	100 U	100 U
Acetone			6000		130 U	100 U	100 U
Benzene	5	1	1	1	**850**	**85**	**400**
Chloroethane			5		25 U	20 U	20 U
Cyclohexane			NE		530	470	400
Ethylbenzene	700		700	5	**1500**	**860**	**740**
Isopropylbenzene			700		180	130	74
Methylcyclohexane			NE		1000	1200	560
m-Xylene & p-Xylene	Total Xyl:10,000	Total Xyl:1000	2	Total Xyl: 2	**5000**	**3700**	**3200**
o-Xylene	Total Xyl:10,000	Total Xyl:1000	2	Total Xyl: 2	**190**	**14** J	**1300**
Toluene	1000		600	5	**110**	5.0 J	**3600**
Total BTEX Concentration					7650	4664	9240

All concentrations in ug/L (parts per billion)
Highlighted concentrations in boldface type exceed limits.
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NE = Not Established

TABLE 9
FIELD BLANK AND TRIP BLANK SAMPLE RESULTS
Area 29 Remedial Enhancement Investigation
FAA William J. Hughes Technical Center

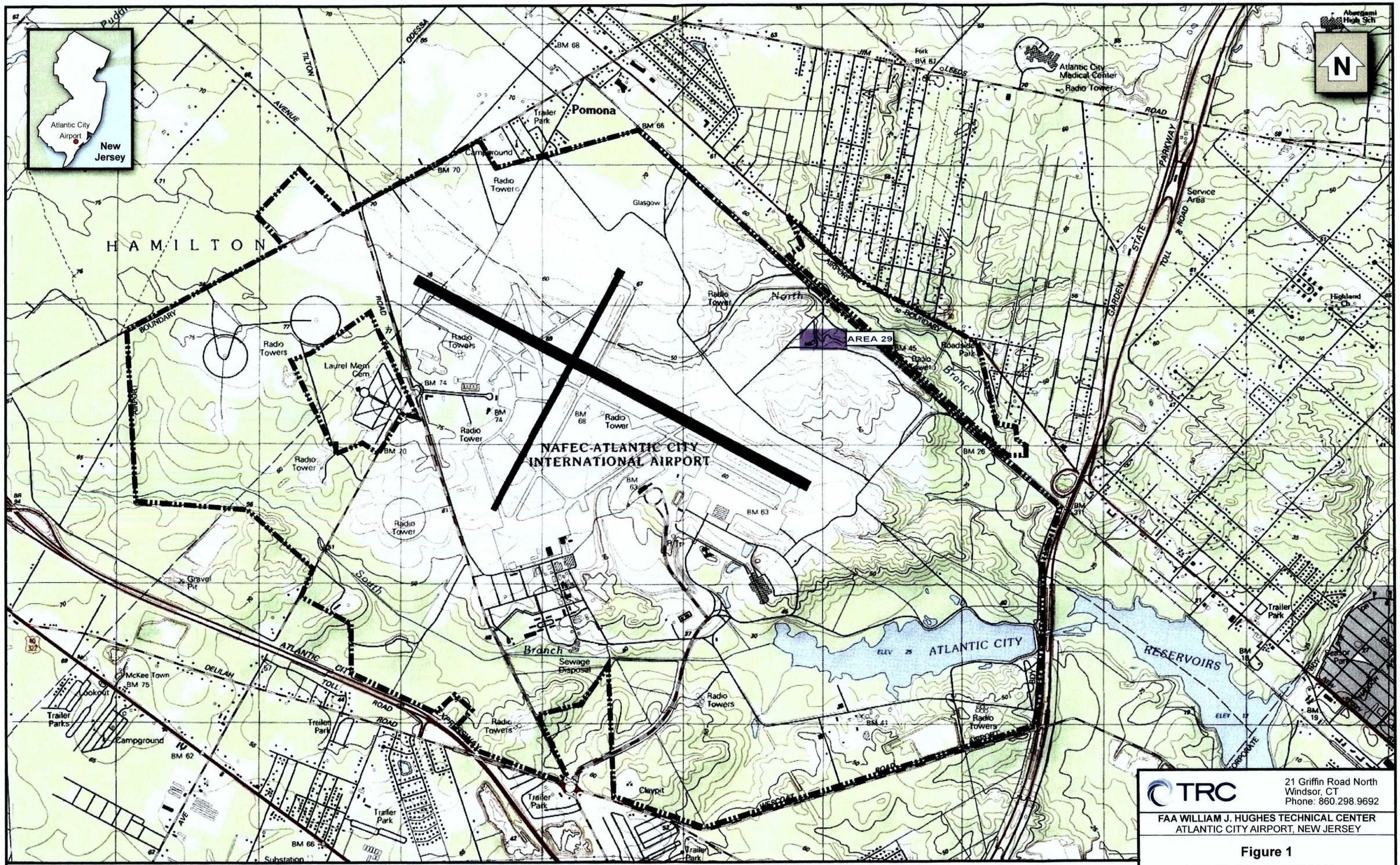
Sample ID	New Jersey	ROD-Based	FB021114		FB021214		FB021414	
Sampling Date	GWQS	Cleanup	2/11/2014		2/12/2014		2/14/2014	
Matrix		Criteria	Water		Water		Water	
Dilution Factor			1		1		1	
VOA-8260C-WATER			Result	Q	Result	Q	Result	Q
1,1,1-Trichloroethane	30		1.0	U	1.0	U	1.0	U
1,1,2,2-Tetrachloroethane	1		1.0	U	1.0	U	1.0	U
1,1,2-Trichloroethane	NA		1.0	U	1.0	U	1.0	U
1,1-Dichloroethane	3		1.0	U	1.0	U	1.0	U
1,1-Dichloroethene	50		1.0	U	1.0	U	1.0	U
1,2,3-Trichlorobenzene	1		1.0	U	1.0	U	1.0	U
1,2,4-Trichlorobenzene	NA		1.0	U	1.0	U	1.0	U
1,2-Dibromo-3-Chloropropane	9		1.0	U	1.0	U	1.0	U
1,2-Dibromoethane	0.02		1.0	U	1.0	U	1.0	U
1,2-Dichlorobenzene	600		1.0	U	1.0	U	1.0	U
1,2-Dichloroethane	2		1.0	U	1.0	U	1.0	U
1,2-Dichloropropane	1		1.0	U	1.0	U	1.0	U
1,3-Dichlorobenzene	600		1.0	U	1.0	U	1.0	U
1,4-Dichlorobenzene	75		1.0	U	1.0	U	1.0	U
1,4-Dioxane	10		50	U	50	U	50	U
2-Butanone	300		5.0	U	5.0	U	5.0	U
2-Hexanone	300		5.0	U	5.0	U	5.0	U
4-Methyl-2-pentanone	NA		5.0	U	5.0	U	5.0	U
Acetone	6000		5.0	U	5.0	U	5.0	U
Benzene	1	1	1.0	U	1.0	U	1.0	U
Bromochloromethane	4		1.0	U	1.0	U	1.0	U
Bromodichloromethane	10		1.0	U	1.0	U	1.0	U
Bromoform	700		1.0	U	1.0	U	1.0	U
Bromomethane	1		1.0	U	1.0	U	1.0	U
Carbon disulfide	50		1.0	U	1.0	U	1.0	U
Carbon tetrachloride	NA		1.0	U	1.0	U	1.0	U
Chlorobenzene	1		1.0	U	1.0	U	1.0	U
Chloroethane	5		1.0	U	1.0	U	1.0	U
Chloroform	70		1.0	U	1.0	U	1.0	U
Chloromethane	NA		1.0	U	1.0	U	1.0	U
cis-1,2-Dichloroethene	70		1.0	U	1.0	U	1.0	U
cis-1,3-Dichloropropene	NA		1.0	U	1.0	U	1.0	U
Cyclohexane	NA		1.0	U	1.0	U	1.0	U
Dibromochloromethane	1		1.0	U	1.0	U	1.0	U
Dichlorodifluoromethane	1000		1.0	U	1.0	U	1.0	U
Ethylbenzene	700	5	1.0	U	1.0	U	1.0	U
Freon TF	0.03		1.0	U	1.0	U	1.0	U
Isopropylbenzene	700		1.0	U	1.0	U	1.0	U
Methyl acetate	7000		5.0	U	5.0	U	5.0	U
Methylcyclohexane	70		1.0	U	1.0	U	1.0	U
Methylene Chloride	NA		1.0	U	1.0	U	1.0	U
MTBE	3		1.0	U	1.0	U	1.0	U
Styrene	NA	Total Xyl: 2	1.0	U	1.0	U	1.0	U
Tetrachloroethene	NA	Total Xyl: 2	1.0	U	1.0	U	1.0	U
Toluene	100		1.0	U	1.0	U	1.0	U
trans-1,2-Dichloroethene	1		1.0	U	1.0	U	1.0	U
trans-1,3-Dichloropropene	600	5	1.0	U	1.0	U	1.0	U
Trichloroethene	100		1.0	U	1.0	U	1.0	U
Trichlorofluoromethane	1		1.0	U *	1.0	U *	1.0	U
Vinyl chloride	1		1.0	U	1.0	U	1.0	U
Xylenes, Total	2000		2.0	U	2.0	U	2.0	U
Total VOC Concentration	1		0.0		0.0		0.0	
GRO	NA	NA	Not Analyzed		25	U	Not Analyzed	
C10-C44	NA	NA	Not Analyzed		0.13	U	Not Analyzed	

All concentrations in ug/L (parts per billion)
U : Analyzed for but not detected.
U * : LCS or LCSD exceeds the control limits.
NA : Not applicable

TABLE 9
FIELD BLANK AND TRIP BLANK SAMPLE RESULTS
Area 29 Remedial Enhancement Investigation
FAA William J. Hughes Technical Center

Client ID	New Jersey	ROD-Based	FB040114		TB040114	
Sampling Date	GWQS	Cleanup	4/1/2014		4/1/2014	
Matrix		Criteria	Water		Water	
Dilution Factor			1		1	
VOA-8260C-WATER			Result	Q	Result	Q
1,1,1-Trichloroethane	30		1.0	U	1.0	U
1,1,2,2-Tetrachloroethane	1		1.0	U	1.0	U
1,1,2-Trichloro-1,2,2-trifluoroethane	NA		1.0	U	1.0	U
1,1,2-Trichloroethane	3		1.0	U	1.0	U
1,1-Dichloroethane	50		1.0	U	1.0	U
1,1-Dichloroethene	1		1.0	U	1.0	U
1,2,3-Trichlorobenzene	NA		1.0	U	1.0	U
1,2,4-Trichlorobenzene	9		1.0	U	1.0	U
1,2-Dibromo-3-Chloropropane	0.02		1.0	U	1.0	U
1,2-Dichlorobenzene	600		1.0	U	1.0	U
1,2-Dichloroethane	2		1.0	U	1.0	U
1,2-Dichloropropane	1		1.0	U	1.0	U
1,3-Dichlorobenzene	600		1.0	U	1.0	U
1,4-Dichlorobenzene	75		1.0	U	1.0	U
1,4-Dioxane	10		50	U	50	U
2-Butanone (MEK)	300		5.0	U	5.0	U
2-Hexanone	300		5.0	U	5.0	U
4-Methyl-2-pentanone (MIBK)	NA		5.0	U	5.0	U
Acetone	6000		5.0	U	5.0	U
Benzene	1	1	1.0	U	1.0	U
Bromoform	4		1.0	U	1.0	U
Bromomethane	10		1.0	U	1.0	U
Carbon disulfide	700		1.0	U	1.0	U
Carbon tetrachloride	1		1.0	U	1.0	U
Chlorobenzene	50		1.0	U	1.0	U
Chlorobromomethane	NA		1.0	U	1.0	U
Chlorodibromomethane	1		1.0	U	1.0	U
Chloroethane	5		1.0	U	1.0	U
Chloroform	70		1.0	U	1.0	U
Chloromethane	NA		1.0	U	1.0	U
cis-1,2-Dichloroethene	70		1.0	U	1.0	U
cis-1,3-Dichloropropene	NA		1.0	U	1.0	U
Cyclohexane	NA		1.0	U	1.0	U
Dichlorobromomethane	1		1.0	U	1.0	U
Dichlorodifluoromethane	1000		1.0	U	1.0	U
Ethylbenzene	700	5	1.0	U	1.0	U
Ethylene Dibromide	0.03		1.0	U	1.0	U
Isopropylbenzene	700		1.0	U	1.0	U
Methyl acetate	7000		5.0	U	5.0	U
Methyl tert-butyl ether	70		1.0	U	1.0	U
Methylcyclohexane	NA		1.0	U	1.0	U
Methylene Chloride	3		1.0	U	1.0	U
m-Xylene & p-Xylene	NA	Total X: 2	1.0	U	1.0	U
o-Xylene	NA	Total X: 2	1.0	U	1.0	U
Styrene	100		1.0	U	1.0	U
Tetrachloroethene	1		1.0	U	1.0	U
Toluene	600	5	1.0	U	1.0	U
trans-1,2-Dichloroethene	100		1.0	U	1.0	U
trans-1,3-Dichloropropene	1		1.0	U	1.0	U
Trichloroethene	1		1.0	U	1.0	U
Trichlorofluoromethane	2000		1.0	U	1.0	U
Vinyl chloride	1		1.0	U	1.0	U
Total VOC Concentration	NA		0.0		0.0	

All concentrations in ug/L (parts per billion)
U : Analyzed for but not detected.
NA : Not applicable



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Windsor, CT
Phone: 860.298.9692

FAA WILLIAM J. HUGHES TECHNICAL CENTER
ATLANTIC CITY AIRPORT, NEW JERSEY

Figure 1
Area 29 Site Location Map

DATE: 07/2014 | PROJECT NO. 162662.000190.000408

NOTES:

1) BASE MAP BY KUCERA INTERNATIONAL IS A FULL PHOTOGRAMMETRIC UPDATE OF AERIAL PHOTOGRAPHY ORIGINALLY TAKEN ON 03/19/01, PUBLISHED ON 11/07/2002 AND SUPPLIED BY THE FAA. BASE MAP WAS REVISED BASED ON 2007 AND 2008 AERIAL PHOTOGRAPHY PUBLISHED BY THE NJ OFFICE OF INFORMATION TECHNOLOGY (NJOIT), OFFICE OF GEOGRAPHIC INFORMATION SYSTEMS (OGIS).
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N 228610.60
E 475478.97

N 228610.60
E 475551.97

N 228571.61
E 475197.30

N 228486.10
E 475378.09

N 228481.21
E 475154.54

N 228460.60
E 475476.97

N 228460.60
E 475551.97

N 228395.70
E 475335.33

FORMER 10,000 GALLON UST GRAVE

AREA OF SUSPECTED CONTAMINATION (SEE NOTE 4)

18" CMP INVERT 46.7

INVERT 47.3

18" CMP INVERT 45.8

INVERT 46.6

FORMER UNDERGROUND BURN PAD

FORMER PRODUCTION WELL

TELE/BOX

EASTERN GRID

WESTERN GRID

TREATMENT BUILDING

SEPTIC TANK
DOSING TANK

75 LF-12"ø CLASS 52 DIP

1" PVC

ABANDONED TELEPHONE CABLE

CABLE MARKER

LOW VOLTAGE ELEC. LINE

HANDHOLE

LEACHING

SPLICE MANHOLE

New Jersey State 1983

0 60' 120'

GRAPHIC SCALE

J:\CAD\162662\000190\000408\Area 29 Remedial Enhancement Investigation Report\Figure 2.dwg Layout:Figure 2 July 16, 2014–3:36PM KHollenbeck

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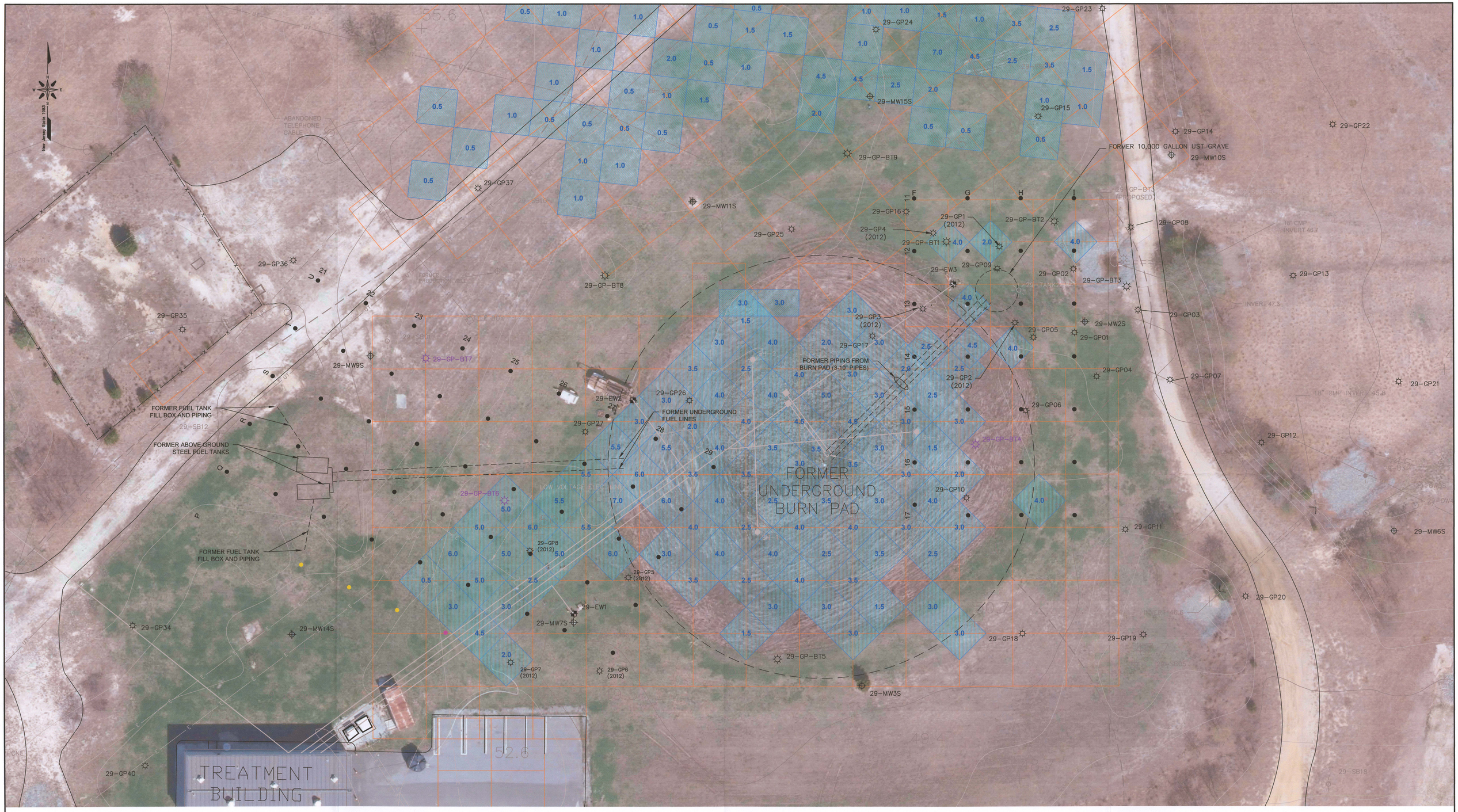
FIGURE 2
AREA 29
GEOPROBE GRID LOCATIONS

Date: 07/15/14 | Project No. 162662-000190-000408



LEGEND

- HISTORICAL SAMPLE LOCATION (RESAMPLED)
- ORIGINAL GRID–BASED SAMPLE LOCATION
- EXPANSION GRID–BASED GEOPROBE LOCATION (NO SAMPLE COLLECTED)
- EXPANSION GRID–BASED SAMPLE LOCATION
- SAMPLING GRID ESTABLISHED BY HORNE ENGINEERING SERVICES
- 6.0 EXCAVATION AREAS WHERE SOILS EXCEEDED AREA 29 ROD CLEANUP LEVELS OF TPH (10,000 ppm) AND/OR PCBs (2 ppm).

NOTES:
1) BASE MAP BY KUCERA INTERNATIONAL IS A FULL PHOTOGRAMMETRIC UPDATE OF AERIAL PHOTOGRAPHY ORIGINALLY TAKEN ON 03/19/01, PUBLISHED ON 11/07/2002 AND SUPPLIED BY THE FAA. BASE MAP WAS REVISED BASED ON 2007 AND 2008 AERIAL PHOTOGRAPHY PUBLISHED BY THE NJ OFFICE OF INFORMATION TECHNOLOGY (NJOIT), OFFICE OF GEOGRAPHIC INFORMATION SYSTEMS (OGIS).
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4) SAMPLING GRID ESTABLISHED BY HORNE ENGINEERING SERVICES, INC. FROM "FINAL AREA 29 SOIL REMEDIATION CLOSURE REPORT–VOLUME I, AUGUST 15, 2003".
5) VALUE IN GRID INDICATES DEPTH BELOW ORIGINAL LAND SURFACE (IN FEET) OF EXCAVATION.

0 20' 40'
GRAPHIC SCALE

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FIGURE 3
AREA 29
GEOPROBE AND SOIL SAMPLE LOCATIONS SUPERIMPOSED OVER HISTORIC SOIL REMEDIATION AREAS

Date: 08/20/14 | Project No. 162662-000190-000408

J:\CAD\162662\000190\000408\Area 29 Remedial Enhancement Investigation Report\Figure 3-6.dwg Layout:Figure 3 August 22, 2014-9:37AM KHollenbeck

LEGEND

◉ GROUNDWATER SAMPLE LOCATION

NOTES:

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0 20' 40'
GRAPHIC SCALE

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FIGURE 4
AREA 29
GROUNDWATER SAMPLE LOCATIONS

Date: 08/19/14 | Project No. 162662-000190-000408

J:\CAD\162662\000190\000408\Area 29 Remedial Enhancement Investigation Report\
Figure 3-6.dwg Layout:Figure 4 August 19, 2014-10:26AM KHollenbeck

29-WG-S25	6.0'
Benzene	0.10
Xylene	35

29-WG-T25	6.5'
Benzene	0.025
Xylene	37

29-WG-T26	6.5'
Benzene	0.062
Xylene	26

29-WG-S24	6.5'
Benzene	0.08
Ethylbenzene	19.0
Xylene	83

29-WG-U28	2.0'
Benzene	0.024

29-WG-U29	3.0'
Benzene	0.027

29-WG-S23	10.5'
Xylene	23.0

29-WG-R22	5.5'
Benzene	0.097
Xylene	47

29-WG-R23	6.5'
Benzene	0.63
Ethylbenzene	33.0
Xylene	140

29-WG-R24	9.0'
Benzene	0.41
Ethylbenzene	17.0
Xylene	66

29-WG-Q22	7.5'
Benzene	0.034
Xylene	48

29-WG-Q23	6.6'
Ethylbenzene	54.0
Xylene	260

29-WG-Q24	6.0'
Ethylbenzene	17.0
Xylene	100

29-WG-R25	6.0'
Benzene	1.9
Ethylbenzene	16.0
Xylene	57

29-WG-Q25	8.5'
Benzene	1.1
Ethylbenzene	61.0
Xylene	260

29-WG-R26	9.0'
Benzene	13
Ethylbenzene	130.0
Xylene	490

29-WG-Q26	6.3'
Benzene	0.28
Ethylbenzene	32.0
Xylene	130

29-WG-R27	6.0'
Benzene	0.34

29-WG-S27	6.0'
Benzene	0.082

29-WG-S26	6.0'
Benzene	0.28
Toluene	7.3
Xylene	27

29-GP-BT6	6-8'
Xylene	58

29-EG-H12	2.5'
1,1,2,2-Tetrachloroethane	0.96

29-EG-G13	6.5'
Ethylbenzene	18.0

29-EG-F14	8.0'
Benzene	0.22

29-EG-G15	6.0'
Ethylbenzene	14.0

29-EG-F16	6.0'
Benzene	0.26

29-EG-I15	3.0'
Benzene	0.23
Ethylbenzene	14
Xylene	26
1,1,2,2-Tetrachloroethane	1.5

29-EG-G16	3.0'
Benzene	0.092

29-EG-H16	6.0'
Benzene	0.50

29-EG-F17	6.0'
Benzene	0.38

29-EG-G17	9.0'
Benzene	0.70
Ethylbenzene	15

29-EG-H17	4.5'
Benzene	0.81

29-EG-I17	12.5'
Benzene	0.031

29-GP23 29-GP24 29-MW15S 29-GP15 29-GP22 29-GP14 FORMER 10,000 GALLON UST GRAVE 29-MW10S 29-GP37 29-MW11S 29-GP-BT9 29-GP-BT3 (PROPOSED) 29-GP16 29-GP1 (2012) 29-GP-BT2 29-GP08 29-GP4 (2012) 29-GP-BT1 29-GP25 29-GP36 29-GP09 29-EW3 29-GP02 29-GP13 29-GP-BT8 29-GP-BT4 29-GP-BT3 29-GP35 29-GP03 29-GP3 (2012) 29-GP05 29-MW2S 29-GP01 29-MW9S 29-GP17 29-GP-BT7 FORMER PIPING FROM BURN PAD (3-10" PIPES) 29-GP04 29-GP2 (2012) 29-GP07 29-EW2 29-GP26 29-GP06 FORMER UNDERGROUND FUEL LINES 29-GP27 FORMER FUEL TANK FILL BOX AND PIPING 29-SB12 FORMER ABOVE GROUND STEEL FUEL TANKS 29-GP21 29-GP12 FORMER UNDERGROUND BURN PAD 29-GP-BT10 29-GP10 29-GP11 29-MW6S 29-GP-BT6 29-GP8 (2012) 29-GP5 (2012) 29-GP20 29-EW1 29-MW7S 29-GP34 29-MW14S 29-GP18 29-GP19 29-GP-BT5 29-GP7 (2012) 29-GP6 (2012) 29-MW3S 29-GP40 TREATMENT BUILDING

LEGEND

- HISTORICAL SAMPLE LOCATION (RESAMPLED)
- GEOPROBE SOIL SAMPLE LOCATION
- EXPANSION GRID–BASED GEOPROBE LOCATION (NO SAMPLE COLLECTED)

Location ID → 29-WG-R23 | 6.5' — Sample depth below ground surface

Benzene	0.63
Ethylbenzene	33.0
Xylene	140

Concentrations Reported in Parts per Million (ppm). Yellow shading indicates an exceedance of the Default NJ Impact to Ground Water Soil Screening Levels (IGWSSLs)

Note:
Samples are considered Non Detect (ND) or below the applicable comparison criteria unless otherwise noted.

SAMPLING GRID ESTABLISHED BY HORNE ENGINEERING SERVICES

6.0 EXCAVATION AREAS WHERE SOILS EXCEEDED AREA 29 ROD CLEANUP LEVELS OF TPH (10,000 ppm) AND/OR PCBs (2 ppm).

NOTES:
1) BASE MAP BY KUCERA INTERNATIONAL IS A FULL PHOTOGRAMMETRIC UPDATE OF AERIAL PHOTOGRAPHY ORIGINALLY TAKEN ON 03/19/01, PUBLISHED ON 11/07/2002 AND SUPPLIED BY THE FAA. BASE MAP WAS REVISED BASED ON 2007 AND 2008 AERIAL PHOTOGRAPHY PUBLISHED BY THE NJ OFFICE OF INFORMATION TECHNOLOGY (NJOIT), OFFICE OF GEOGRAPHIC INFORMATION SYSTEMS (OGIS). AERIAL PHOTO SHOWN WAS TAKEN IN 2010 AND SUPPLIED BY THE FAA.
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4) SAMPLING GRID ESTABLISHED BY HORNE ENGINEERING SERVICES, INC. FROM "FINAL AREA 29 SOIL REMEDIATION CLOSURE REPORT–VOLUME I, AUGUST 15, 2003".
5) VALUE IN GRID INDICATES DEPTH BELOW ORIGINAL LAND SURFACE (IN FEET) OF EXCAVATION.

0 20' 40'
GRAPHIC SCALE

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FIGURE 5
AREA 29
SOIL SAMPLE RESULTS ABOVE COMPARISON CRITERIA

Date: 08/19/14 | Project No. 162662-000190-000408

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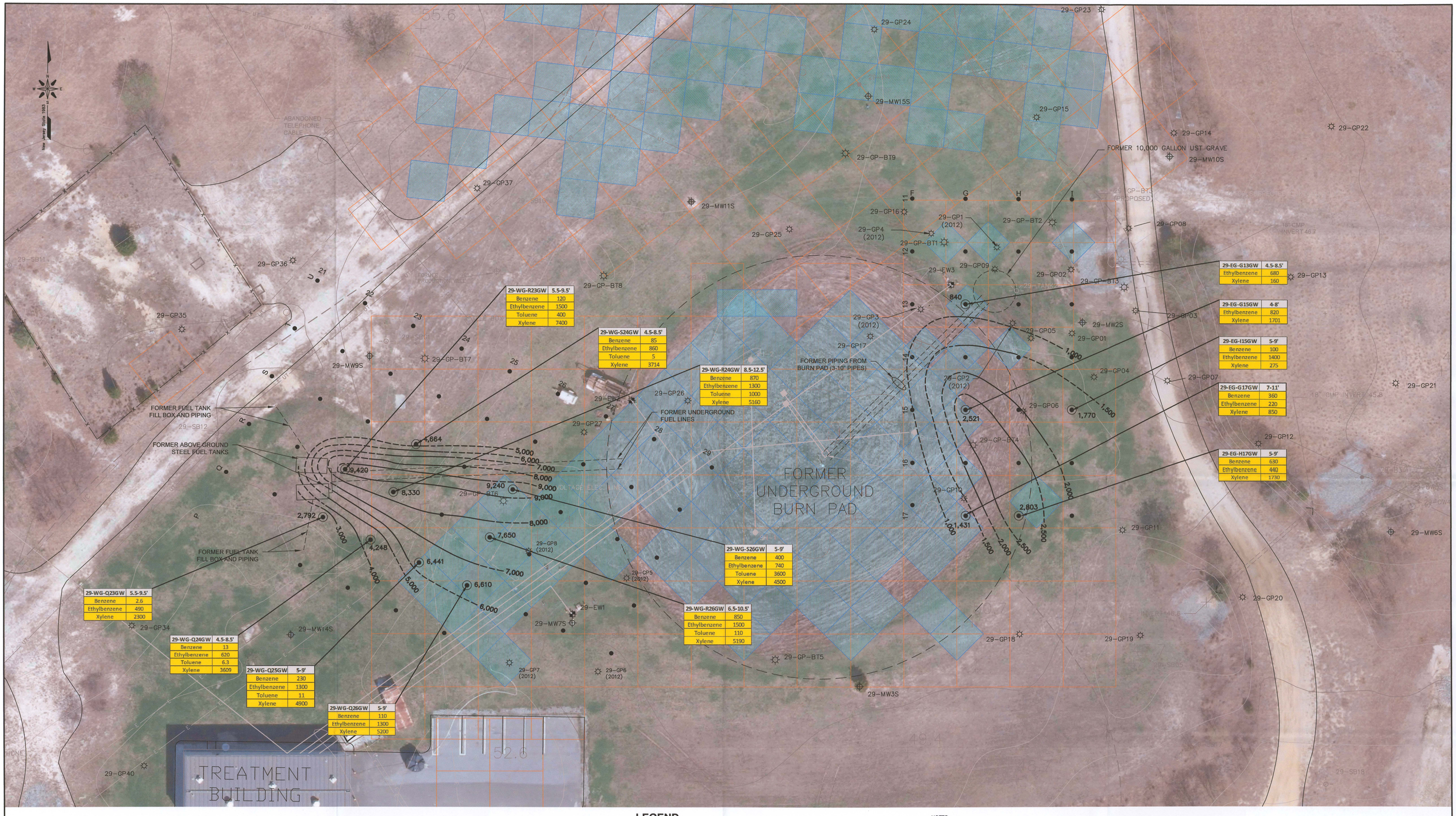
Figure 3-6.dwg Layout:Figure 5 August 22, 2014–10:02AM Khollenbeck



LEGEND

Location ID → **29-WG-Q24GW | 4.5-8.5'**
Benzene 13
Ethylbenzene 620
Toluene 6.3
Xylene 3609

- Sample depth below ground surface
- Concentrations Reported in Parts per Billion (ppb) and exceed the Area 29 ROD–Based Groundwater Remediation Goals

Note:
Samples where one or more BTEX compound results are not reported indicate that the individual BTEX compound was either ND or below the Area 29 ROD–Based Groundwater Remediation Goals with respect to BTEX compounds.

- GROUNDWATER AND SOIL SAMPLE LOCATION
- SOIL SAMPLE ONLY LOCATION
- 8,330 — TOTAL BTEX (ppb)
- 8,000 — TOTAL BTEX ISOCONCENTRATION (ppb) (DASHED WHERE INFERRED)
- SAMPLING GRID ESTABLISHED BY HORNE ENGINEERING SERVICES
- EXCAVATION AREAS WHERE SOILS EXCEEDED AREA 29 ROD CLEANUP LEVELS OF TPH (10,000 ppm) AND/OR PCBs (2 ppm).

NOTES:
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4) NO OTHER CONSTITUENTS WERE DETECTED ABOVE ROD–BASED GROUNDWATER REMEDIATION GOALS. 1,1 DICHLOROETHENE WAS DETECTED ABOVE THE NEW JERSEY MAXIMUM CONTAMINANT LEVEL AT 29–EGG17 AND 29–EGH17. CHLOROFORM WAS DETECTED ABOVE THE NEW JERSEY GROUNDWATER QUALITY STANDARD AT 29–EGG17.

0 20' 40'
GRAPHIC SCALE

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FIGURE 6
AREA 29
GROUNDWATER SAMPLE RESULTS ABOVE COMPARISON CRITERIA AND TOTAL BTEX ISOCONCENTRATIONS

Date: 08/19/14 | Project No. 162662-000190-000408

J:\CAD\162662\000190\000408\Area 29 Remedial Enhancement Investigation Report\Figure 3–6.dwg Layout:Figure 6 August 26, 2014–1:56PM KHollenbeck

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

Job Number: 460-71107-1

Job Description: Area 29 Remedial Enhancment Investigatio

For:
TRC Environmental Corporation
21 Griffin Road North
Windsor, CT 06095

Attention: Mr. Mark Winbourne

Approved for release.
Janet Mosley
Manager of Project Management Assistants
2/26/2014 2:44 PM

Designee for
Melissa Haas, Project Manager I
777 New Durham Road, Edison, NJ, 08817
(203)944-1310
melissa.haas@testamericainc.com
02/26/2014

TestAmerica Edison Certifications and Approvals: Connecticut: CTDOH #PH-0200, New Jersey: NJDEP (NELAP) #12028, New York: NYDOH (NELAP) #11452, NYDOH (ELAP) #11452, Pennsylvania: PADEP (NELAP) 68-00522 and Rhode Island: RIDOH LAO00132

Table of Contents

Table of Contents

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CASE NARRATIVE

Client: TRC Environmental Corporation

Project: Area 29 Remedial Enhancment Investigatio

Report Number: 460-71107-1

This case narrative is in the form of an exception report, where only the anomalies related to this report, method specific performance and/or QA/QC issues are discussed. If there are no issues to report, this narrative will include a statement that documents that there are no relevant data issues.

It should be noted that samples with elevated Reporting Limits (RLs) as a result of a dilution may not be able to satisfy customer reporting limits in some cases. Such increases in the RLs are unavoidable but acceptable consequence of sample dilution that enables quantification of target analytes or interferences which exceed the calibration range of the instrument.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

RECEIPT

The samples were received on 02/12/2014; the samples arrived in good condition, properly preserved and on ice. The temperature of the coolers at receipt was 1.1 C.

Note: All samples which require thermal preservation are considered acceptable if the arrival temperature is within 2C of the required temperature or method specified range. For samples with a specified temperature of 4C, samples with a temperature ranging from just above freezing temperature of water to 6C shall be acceptable. Samples that are hand delivered immediately following collection may not meet these criteria, however they will be deemed acceptable according to NELAC standards, if there is evidence that the chilling process has begun, such as arrival on ice, etc.

DIESEL RANGE ORGANICS

Sample 460-71107-1 was analyzed for Diesel Range Organics in accordance with EPA SW-846 Method 8015B - DRO. The samples were prepared on 02/18/2014 and analyzed on 02/19/2014.

No difficulties were encountered during the DRO analysis.

All quality control parameters were within the acceptance limits.

GASOLINE RANGE ORGANICS

Sample 460-71107-1 was analyzed for Gasoline Range Organics in accordance with EPA SW-846 Method 8015B - GRO. The samples were analyzed on 02/21/2014.

Acetone was detected in method blank MB 460-208752/7 at a level exceeding the reporting limit. If the associated sample reported a result above the MDL and/or RL, the result has been "B" flagged. Acetone was detected in method blank MB 460-208845/6 at a level exceeding the reporting limit. If the associated sample reported a result above the MDL and/or RL, the result has been "B" flagged.

Refer to the QC report for details.

No other difficulties were encountered during the GRO analysis.

All quality control parameters were within the acceptance limits.

VOLATILE ORGANICS

Samples 460-71107-2 through 460-71107-18 were analyzed for Volatile organics in accordance with EPA SW-846 Methods 8260C. The samples were prepared on 02/17/2014 and analyzed on 02/19/2014, 02/20/2014, 02/22/2014 and 02/23/2014.

The continuing calibration verification (CCV) associated with batch 208257 recovered above the upper control limit for Acetone and Chloroethane. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported.

Surrogate 1,2-Dichloroethane-d4 recovery for the following sample was outside control limits: 29-WGR26(9.0') (460-71107-16). Surrogate recoveries for the other three system monitoring compounds were within control limits; therefore, re-analysis was not performed.

The continuing calibration verification (CCV) associated with batch 208431 recovered outside control limits for Dichlorodifluoromethane,

Bromomethane, Trichlorofluoromethane, and Bromoform. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported.

Several analytes failed the recovery criteria low for the MS of sample 460-71107-14 in batch 460-208752.

Several analytes failed the recovery criteria low for the MSD of sample 460-71107-14 in batch 460-208257. Several analytes exceeded the rpd limit.

1,1,2-Trichloroethane, Bromoform and Dibromochloromethane failed the recovery criteria low for the MS of sample 460-71107-8 in batch 460-208257. Several analytes failed the recovery criteria high.

For the MSD of sample 460-71107-8 in batch 460-208348, 1,1,2-Trichloroethane, Bromoform, Dibromochloromethane and trans-1,3-Dichloropropene failed the recovery criteria low. Several analytes failed the recovery criteria high. Also, Chloromethane exceeded the rpd limit.

1,1,2-Trichloroethane, Bromoform, Carbon disulfide and Dibromochloromethane failed the recovery criteria low for the MS of sample 460-71107-9 in batch 460-208348. 1,1,2,2-Tetrachloroethane, 1,2-Dibromo-3-Chloropropane, Cyclohexane and Methylcyclohexane failed the recovery criteria high.

For the MSD of sample 460-71107-9 in batch 460-208431, 1,1,2-Trichloroethane and Bromoform failed the recovery criteria low. Several analytes failed the recovery criteria high. Also, 1,1,2-Trichloroethane exceeded the rpd limit.

Several analytes failed the recovery criteria low for the MS/MSD of sample 460-71165-33 in batch 460-208431. Several analytes failed the recovery criteria high.

Refer to the QC report for details.

The following sample was diluted due to the abundance of target and non-target analytes: 29-WGQ27(6.5') (460-71107-9). Elevated reporting limits (RLs) are provided.

The following sample(s) was diluted to bring the concentration of target analytes within the calibration range: 29-WGQ22(12.5') (460-71107-3), 29-WGQ24(6') (460-71107-5), 29-WGQ25(18.5') (460-71107-7), 29-WGQ25(8.5') (460-71107-6), 29-WGR26(9.0') (460-71107-16). Elevated reporting limits (RLs) are provided.

The following sample was diluted to bring the concentration of target analytes within the calibration range: 29-WGQ23(6.6') (460-71107-4). Elevated reporting limits (RLs) are provided.

The following samples were diluted to bring the concentration of target analytes within the calibration range: 29-WGQ26(6.3') (460-71107-8), 29-WGR24(9.0') (460-71107-18), 29-WGR25(6.0') (460-71107-17), 29-WGR27(6.0') (460-71107-15). Elevated reporting limits (RLs) are provided.

No other difficulties were encountered during the Volatile organics analyses.

All other quality control parameters were within the acceptance limits.

VOLATILE ORGANICS

Sample 460-71107-1 was analyzed for Volatile organics in accordance with EPA SW-846 Methods 8260C. The samples were analyzed on 02/21/2014.

The continuing calibration verification (CCV) associated with batch 208617 recovered above the upper control limit for Dichlorodifluoromethane, Bromomethane, Chloroethane, and Trichlorofluoromethane. The sample(s) associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported.

The laboratory control sample duplicate (LCSD) for batch 208617 recovered outside control limits for the following analyte: Trichlorofluoromethane. This analyte was biased high in the LCSD and was not detected inthe associated sample; therefore, the data have been reported.

Refer to the QC report for details.

No other difficulties were encountered during the Volatile organics analysis.

All other quality control parameters were within the acceptance limits.

PERCENT SOLIDS/PERCENT MOISTURE

Samples 460-71107-2 through 460-71107-18 were analyzed for percent solids/percent moisture in accordance with EPA Method CLPISM01.2 (Exhibit D). The samples were analyzed on 02/15/2014.

No difficulties were encountered during the %solids/moisture analyses.

All quality control parameters were within the acceptance limits.

SAMPLE SUMMARY

Client: TRC Environmental Corporation

Job Number: 460-71107-1

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
460-71107-1FB	FB021214	Water	02/12/2014 0845	02/12/2014 2000
460-71107-2	29-WGQ21(10.6')	Solid	02/12/2014 0905	02/12/2014 2000
460-71107-3	29-WGQ22(12.5')	Solid	02/12/2014 0915	02/12/2014 2000
460-71107-4	29-WGQ23(6.6')	Solid	02/12/2014 0925	02/12/2014 2000
460-71107-5	29-WGQ24(6')	Solid	02/12/2014 0930	02/12/2014 2000
460-71107-6	29-WGQ25(8.5')	Solid	02/12/2014 0945	02/12/2014 2000
460-71107-7	29-WGQ25(18.5')	Solid	02/12/2014 0950	02/12/2014 2000
460-71107-8	29-WGQ26(6.3')	Solid	02/12/2014 1025	02/12/2014 2000
460-71107-8MS	29-WGQ26(6.3')	Solid	02/12/2014 1025	02/12/2014 2000
460-71107-8MSD	29-WGQ26(6.3')	Solid	02/12/2014 1025	02/12/2014 2000
460-71107-9	29-WGQ27(6.5')	Solid	02/12/2014 1040	02/12/2014 2000
460-71107-10	29-WGQ28(1.0')	Solid	02/12/2014 1050	02/12/2014 2000
460-71107-11	29-WGQ29(6.0')	Solid	02/12/2014 1020	02/12/2014 2000
460-71107-12	29-WGR29(2.5')	Solid	02/12/2014 1140	02/12/2014 2000
460-71107-13	29-WGR29(12.5')	Solid	02/12/2014 1150	02/12/2014 2000
460-71107-14	29-WGR28(6.0')	Solid	02/12/2014 1245	02/12/2014 2000
460-71107-14MS	29-WGR28(6.0')	Solid	02/12/2014 1245	02/12/2014 2000
460-71107-14MSD	29-WGR28(6.0')	Solid	02/12/2014 1245	02/12/2014 2000
460-71107-15	29-WGR27(6.0')	Solid	02/12/2014 1300	02/12/2014 2000
460-71107-16	29-WGR26(9.0')	Solid	02/12/2014 1315	02/12/2014 2000
460-71107-17	29-WGR25(6.0')	Solid	02/12/2014 1335	02/12/2014 2000
460-71107-18	29-WGR24(9.0')	Solid	02/12/2014 1340	02/12/2014 2000

EXECUTIVE SUMMARY - Detections

Client: TRC Environmental Corporation

Job Number: 460-71107-1

Lab Sample ID / Analyte	Client Sample ID	Result	Qualifier	Reporting Limit	Units	Method
460-71107-2	**29-WGQ21(10.6')**					
Acetone		24	B	4.5	ug/Kg	8260C
Benzene		0.23	J	0.90	ug/Kg	8260C
Toluene		0.14	J	0.90	ug/Kg	8260C
Ethylbenzene		8.0		0.90	ug/Kg	8260C
Xylenes, Total		12		1.8	ug/Kg	8260C
Cyclohexane		1.4		0.90	ug/Kg	8260C
Isopropylbenzene		3.4		0.90	ug/Kg	8260C
Methylcyclohexane		4.8		0.90	ug/Kg	8260C
Percent Moisture		11.9		1.0	%	Moisture
Percent Solids		88.1		1.0	%	Moisture
460-71107-3	**29-WGQ22(12.5')**					
Benzene		34	J	190	ug/Kg	8260C
Ethylbenzene		10000		190	ug/Kg	8260C
Xylenes, Total		48000		370	ug/Kg	8260C
Cyclohexane		5100		190	ug/Kg	8260C
Isopropylbenzene		5300		190	ug/Kg	8260C
Methylcyclohexane		36000		190	ug/Kg	8260C
Percent Moisture		9.2		1.0	%	Moisture
Percent Solids		90.8		1.0	%	Moisture
460-71107-4	**29-WGQ23(6.6')**					
Ethylbenzene		54000		1100	ug/Kg	8260C
Xylenes, Total		260000		2300	ug/Kg	8260C
Cyclohexane		32000		1100	ug/Kg	8260C
Isopropylbenzene		23000		1100	ug/Kg	8260C
Methylcyclohexane		190000		1100	ug/Kg	8260C
Percent Moisture		13.5		1.0	%	Moisture
Percent Solids		86.5		1.0	%	Moisture
460-71107-5	**29-WGQ24(6')**					
Ethylbenzene		17000		500	ug/Kg	8260C
Xylenes, Total		100000		1000	ug/Kg	8260C
Cyclohexane		37000		500	ug/Kg	8260C
Isopropylbenzene		9400		500	ug/Kg	8260C
Methylcyclohexane		150000		500	ug/Kg	8260C
Percent Moisture		12.3		1.0	%	Moisture
Percent Solids		87.7		1.0	%	Moisture

EXECUTIVE SUMMARY - Detections

Client: TRC Environmental Corporation

Job Number: 460-71107-1

Lab Sample ID / Analyte	Client Sample ID	Result	Qualifier	Reporting Limit	Units	Method
460-71107-6	**29-WGQ25(8.5')**					
Benzene		1000		1000	ug/Kg	8260C
Ethylbenzene		61000		1000	ug/Kg	8260C
Xylenes, Total		260000		2000	ug/Kg	8260C
Cyclohexane		120000		1000	ug/Kg	8260C
Isopropylbenzene		19000		1000	ug/Kg	8260C
Methylcyclohexane		310000		1000	ug/Kg	8260C
Percent Moisture		11.3		1.0	%	Moisture
Percent Solids		88.7		1.0	%	Moisture
460-71107-7	**29-WGQ25(18.5')**					
Benzene		1100		1100	ug/Kg	8260C
Toluene		350	J	1100	ug/Kg	8260C
Ethylbenzene		59000		1100	ug/Kg	8260C
Xylenes, Total		240000		2100	ug/Kg	8260C
Cyclohexane		150000		1100	ug/Kg	8260C
Isopropylbenzene		17000		1100	ug/Kg	8260C
Methylcyclohexane		310000		1100	ug/Kg	8260C
Percent Moisture		11.3		1.0	%	Moisture
Percent Solids		88.7		1.0	%	Moisture
460-71107-8	**29-WGQ26(6.3')**					
Benzene		280	J	930	ug/Kg	8260C
Toluene		330	J	930	ug/Kg	8260C
Ethylbenzene		32000		930	ug/Kg	8260C
Xylenes, Total		130000		1900	ug/Kg	8260C
Cyclohexane		62000		930	ug/Kg	8260C
Isopropylbenzene		11000		930	ug/Kg	8260C
Methylcyclohexane		170000		930	ug/Kg	8260C
Percent Moisture		13.9		1.0	%	Moisture
Percent Solids		86.1		1.0	%	Moisture
460-71107-9	**29-WGQ27(6.5')**					
Ethylbenzene		950		170	ug/Kg	8260C
Xylenes, Total		4800		340	ug/Kg	8260C
Cyclohexane		1700		170	ug/Kg	8260C
Isopropylbenzene		2200		170	ug/Kg	8260C
Methylcyclohexane		15000		170	ug/Kg	8260C
Percent Moisture		13.0		1.0	%	Moisture
Percent Solids		87.0		1.0	%	Moisture

EXECUTIVE SUMMARY - Detections

Client: TRC Environmental Corporation

Job Number: 460-71107-1

Lab Sample ID / Analyte	Client Sample ID	Result	Qualifier	Reporting Limit	Units	Method
460-71107-10	**29-WGQ28(1.0')**					
Acetone		7.3	B	4.8	ug/Kg	8260C
Methylcyclohexane		0.32	J	0.96	ug/Kg	8260C
Percent Moisture		7.7		1.0	%	Moisture
Percent Solids		92.3		1.0	%	Moisture
460-71107-11	**29-WGQ29(6.0')**					
Acetone		19	B	5.2	ug/Kg	8260C
Carbon disulfide		0.25	J	1.0	ug/Kg	8260C
2-Butanone		1.8	J	5.2	ug/Kg	8260C
Ethylbenzene		0.46	J	1.0	ug/Kg	8260C
Xylenes, Total		1.4	J	2.1	ug/Kg	8260C
Cyclohexane		1.5		1.0	ug/Kg	8260C
Isopropylbenzene		0.46	J	1.0	ug/Kg	8260C
Methylcyclohexane		4.5		1.0	ug/Kg	8260C
Percent Moisture		18.8		1.0	%	Moisture
Percent Solids		81.2		1.0	%	Moisture
460-71107-12	**29-WGR29(2.5')**					
Acetone		51	B	4.8	ug/Kg	8260C
Percent Moisture		12.2		1.0	%	Moisture
Percent Solids		87.8		1.0	%	Moisture
460-71107-13	**29-WGR29(12.5')**					
Acetone		27	B	4.8	ug/Kg	8260C
Percent Moisture		11.6		1.0	%	Moisture
Percent Solids		88.4		1.0	%	Moisture
460-71107-14	**29-WGR28(6.0')**					
Acetone		39	B	4.5	ug/Kg	8260C
Carbon disulfide		0.23	J	0.90	ug/Kg	8260C
2-Butanone		4.4	J	4.5	ug/Kg	8260C
Benzene		0.20	J	0.90	ug/Kg	8260C
Toluene		0.34	J	0.90	ug/Kg	8260C
Ethylbenzene		1.4		0.90	ug/Kg	8260C
Xylenes, Total		5.5		1.8	ug/Kg	8260C
Cyclohexane		6.9		0.90	ug/Kg	8260C
Isopropylbenzene		0.96		0.90	ug/Kg	8260C
Methylcyclohexane		14		0.90	ug/Kg	8260C
Percent Moisture		12.2		1.0	%	Moisture
Percent Solids		87.8		1.0	%	Moisture

EXECUTIVE SUMMARY - Detections

Client: TRC Environmental Corporation

Job Number: 460-71107-1

Lab Sample ID / Analyte	Client Sample ID	Result	Qualifier	Reporting Limit	Units	Method
460-71107-15	**29-WGR27(6.0')**					
Benzene		340	J	380	ug/Kg	8260C
Ethylbenzene		6800		380	ug/Kg	8260C
Xylenes, Total		380	J	760	ug/Kg	8260C
Cyclohexane		26000		380	ug/Kg	8260C
Isopropylbenzene		3000		380	ug/Kg	8260C
Methylcyclohexane		68000		380	ug/Kg	8260C
Percent Moisture		11.1		1.0	%	Moisture
Percent Solids		88.9		1.0	%	Moisture
460-71107-16	**29-WGR26(9.0')**					
Benzene		13000		2000	ug/Kg	8260C
Toluene		820	J	2000	ug/Kg	8260C
Ethylbenzene		130000		2000	ug/Kg	8260C
Xylenes, Total		490000		4000	ug/Kg	8260C
Cyclohexane		280000		2000	ug/Kg	8260C
Isopropylbenzene		35000		2000	ug/Kg	8260C
Methylcyclohexane		560000		2000	ug/Kg	8260C
Percent Moisture		11.7		1.0	%	Moisture
Percent Solids		88.3		1.0	%	Moisture
460-71107-17	**29-WGR25(6.0')**					
Benzene		1900		370	ug/Kg	8260C
Toluene		130	J	370	ug/Kg	8260C
Ethylbenzene		16000		370	ug/Kg	8260C
Xylenes, Total		57000		740	ug/Kg	8260C
Cyclohexane		28000		370	ug/Kg	8260C
Isopropylbenzene		4500		370	ug/Kg	8260C
Methylcyclohexane		50000		370	ug/Kg	8260C
Percent Moisture		13.9		1.0	%	Moisture
Percent Solids		86.1		1.0	%	Moisture
460-71107-18	**29-WGR24(9.0')**					
Benzene		410		340	ug/Kg	8260C
Toluene		160	J	340	ug/Kg	8260C
Ethylbenzene		17000		340	ug/Kg	8260C
Xylenes, Total		66000		670	ug/Kg	8260C
Cyclohexane		39000		340	ug/Kg	8260C
Isopropylbenzene		4400		340	ug/Kg	8260C
Methylcyclohexane		96000		340	ug/Kg	8260C
Percent Moisture		11.7		1.0	%	Moisture
Percent Solids		88.3		1.0	%	Moisture

METHOD SUMMARY

Client: TRC Environmental Corporation

Job Number: 460-71107-1

Description	Lab Location	Method	Preparation Method
Matrix: Solid			
Volatile Organic Compounds by GC/MS	TAL EDI	SW846 8260C	
Closed System Purge and Trap	TAL EDI		SW846 5035
Percent Moisture	TAL EDI	EPA Moisture	
Matrix: Water			
Volatile Organic Compounds by GC/MS	TAL EDI	SW846 8260C	
Purge and Trap	TAL EDI		SW846 5030C
Gasoline Range Organics (GRO) (GC)	TAL EDI	SW846 8015D	
Purge and Trap	TAL EDI		SW846 5030C
Diesel Range Orgnics (DRO) (GC)	TAL EDI	SW846 8015D	
Liquid-Liquid Extraction (Separatory Funnel)	TAL EDI		SW846 3510C

Lab References:

TAL EDI = TestAmerica Edison

Method References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Shipping and Receiving Documents

777 New Durham Road
Edison, New Jersey 08817
Phone: (732) 549-3900 Fax: (732) 549-3679

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

CHAIN OF CUSTODY / ANALYSIS REQUEST

Name (for report and invoice) Mark Winbourne	Samplers Name (Printed) R. Neveu	Site/Project Identification Area 29 Remedial Enhancement Investigation
Company TRC	P. O. # 65643	State (Location of site): NJ: X NY: Other:
		Regulatory Program: QA Level: NJ Reduced
Address 21 Griffin Rd. North	Analysis Turnaround Time: Standard X	
City Windsor State CT 06095	Rush Charges Authorized For: 2 Week / 1 Week / Other	
Phone 860-305-5903 Fax		

Sample Identification	Date	Time	Matrix	No. of Cont.	TCL VOCs TCL (8260/5035)	GRO	DRO	TCL VOCs (8260/5035) Matrix Spike Volume Provided							LAB USE ONLY Sample Numbers
FB021214	2/12/14	0845	Aq	7	X	X	X								1
29-WGQ21 (10.6')		0905	Soil	4				X							2
29-WGQ22 (12.5')		0915		4				X							3
29-WGQ23 (6.6')		0925		4				X							4
29-WGQ24 (6')		0930		4				X							5
29-WGQ25 (8.5')		0945		4				X							6
29-WGQ25 (18.5')		0950		4				X							7
29-WGQ26 (6.3')		1025		12				X	X						8
29-WGQ27 (6.5')		1040		4				X							9
29-WGQ28 (1.0')	2/12/14	1050	Soil	4				X							10
Preservation Used: 1 = ICE, 2 = HCl, 3 = H_2SO_4, 4 = HNO_3, 5 = NaOH Soil:								1,6							
6 = Other MeOH/DI, 7 = Other _____ Water:					1,2	1,2	1								

SHORT HOLD

Special Instructions EDDs Required: EQuIS EPAR2/FAR; NJ Hasle; TRC-CT

Water Metals Filtered (Yes/No)? N/A

Relinquished by 1)	Company TRC	Date / Time 2/12/14 1405	Received by 1)	Company TRC 2/12 1405
Relinquished by 2)	Company	Date / Time 2/13 1800	Received by 2)	Company
Relinquished by 3)	Company	Date / Time 2/12 2200	Received by 3)	Company 2/12/14 2200 TA
Relinquished by 4)		Date / Time	Received by 4)	Company

460-71107 Chain of Custody

Laboratory Certific... 452), Pennsylvania (68-522), Connecticut (PH-0200), Rhode Island (132).

Massachusetts (M-I...

TAL - 0016 (0408)

DW 4. 1/1.1 NC

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

777 New Durham Road
Edison, New Jersey 08817
Phone: (732) 549-3900 Fax: (732) 549-3679

CHAIN OF CUSTODY / ANALYSIS REQUEST

Name (for report and invoice) Mark Wilbourne	Samplers Name (Printed) Rachel Noveu	Site/Project Identification Area 29 Remedial Enhancements Investigation
Company TRC	P. O. # 65643	State (Location of site): NJ: X NY: Other:
		~~Regulatory Program:~~ DW QA Level: NJ Reduced
Address 21 Griffin Rd. N.	Analysis Turnaround Time: Standard X	
City Windsor, CT State 06095	Rush Charges Authorized For: 2 Week / 1 Week / Other	
Phone 860-305-5903 Fax		

ANALYSIS REQUESTED (ENTER "X" BELOW TO INDICATE REQUEST)

LAB USE ONLY
Project No:
Job No: 71107

Sample Identification	Date	Time	Matrix	No. of Cont.	TCL VOCs (8260/5035 w/MS/MSD Provided)		Sample Numbers
29-WGQ29(6.0')	2/12/14	1020	So.I	4	X		11
29-WGR29(2.5')		1140		4	X		12
29-WGR29(12.5')		1150		4	X		13
29-WGR28(6.0')		1245		12	X	X	14
29-WGR27(6.0')		1300		4	X		15
29-WGR26(9.0')		1315		4	X		16
29-WGR25(6.0')		1335	V	4	X		17
29-WGR24(9.0')	2/12/14	1340	So.I	4	X		18
							—
							—

Preservation Used: 1 = ICE, 2 = HCl, 3 = H_2SO_4, 4 = HNO_3, 5 = NaOH, 6 = Other MeoH/DI, 7 = Other _____

Soil: 1,6 Water:

Special Instructions EDD: Required: Equis EPAR2/FAA; TRC. CT; NJ Hazsite Water Metals Filtered (Yes/No)? _____

	Company	Date / Time		Company
Relinquished by 1)	TRC	2/12/14 1405	Received by 1)	TA 2/12 1405
Relinquished by 2)	TA	2/12 1820	Received by 2)	
Relinquished by 3)		2/13 0900	Received by 3)	TA 2/13/14
Relinquished by 4)			Received by 4)	

Laboratory Certifications: New Jersey (12028), New York (11452), Pennsylvania (68-522), Connecticut (PH-0200), Rhode Island (132). TAL - 0016 (0408)

Massachusetts (M-NJ312), North Carolina (No. 578)

TestAmerica Edison Receipt Temperature and pH Log

Job Number: 71107

Number of Coolers: 1 | IR Gun #: 4

Temp. Cooler #1 (Deg C) (Raw/Corrected): 1.1 / 1.1 | Temp. Cooler #4 (Deg C) (Raw/Corrected): _____ | Temp. Cooler #7 (Deg C) (Raw/Corrected): _____

Temp. Cooler #2 (Deg C) (Raw/Corrected): _____ | Temp. Cooler #5 (Deg C) (Raw/Corrected): _____ | Temp. Cooler #8 (Deg C) (Raw/Corrected): _____

Temp. Cooler #3 (Deg C) (Raw/Corrected): _____ | Temp. Cooler #6 (Deg C) (Raw/Corrected): _____ | Temp. Cooler #9 (Deg C) (Raw/Corrected): _____

Sample No.	Ammonia (pH<2)	COD (pH<2)	Nitrate Nitrite (pH<2)	*Metals (pH<2)	Pest (pH 5-9)	PHC (pH<2)	Phenols (pH<2)	Sulfide (pH>9)	TKN (pH<2)	TOC (pH<2)	Total Cyanide (pH>12)	Total Phos (pH<2)	Other

If pH adjustments are required record the information below:

Sample No(s). adjusted: _____

Preservative Name/Conc.: _____ Volume of Preservative used (ml): _____

Lot # of Preservative: _____ Expiration Date: _____

Project Manager and the Department Manager should be notified about the samples which were pH adjusted.

** Samples for Metal analysis which are out of compliance must be acidified at least 24 hours prior to analysis.*

Initials: _____ Date: 2/12/14

EDS-WI-038, Rev 3, 10/8/12

Login Sample Receipt Checklist

Client: TRC Environmental Corporation

Job Number: 460-71107-1

Login Number: 71107
List Number: 1
Creator: Meyers, Gary

List Source: TestAmerica Edison

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	N/A	Not present
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	1.1 ° C IR #4
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	No analysis requiring residual chlorine check assigned.

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

Job Number: 460-71114-1

Job Description: Area 29 Remedial Enhancement Investigati

For:
TRC Environmental Corporation
21 Griffin Road North
Windsor, CT 06095

Attention: Mr. Mark Winbourne

Approved for release.
Janet Mosley
Manager of Project Management Assistants
2/26/2014 2:49 PM

Designee for
Melissa Haas, Project Manager I
777 New Durham Road, Edison, NJ, 08817
(203)944-1310
melissa.haas@testamericainc.com
02/26/2014

TestAmerica Edison Certifications and Approvals: Connecticut: CTDOH #PH-0200, New Jersey: NJDEP (NELAP) #12028, New York: NYDOH (NELAP) #11452, NYDOH (ELAP) #11452, Pennsylvania: PADEP (NELAP) 68-00522 and Rhode Island: RIDOH LAO00132

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CASE NARRATIVE

Client: TRC Environmental Corporation

Project: Area 29 Remedial Enhancement Investigati

Report Number: 460-71114-1

This case narrative is in the form of an exception report, where only the anomalies related to this report, method specific performance and/or QA/QC issues are discussed. If there are no issues to report, this narrative will include a statement that documents that there are no relevant data issues.

It should be noted that samples with elevated Reporting Limits (RLs) as a result of a dilution may not be able to satisfy customer reporting limits in some cases. Such increases in the RLs are unavoidable but acceptable consequence of sample dilution that enables quantification of target analytes or interferences which exceed the calibration range of the instrument.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

RECEIPT

The samples were received on 2/12/2014 8:00 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 1.1° C and 1.1° C.

Note: All samples which require thermal preservation are considered acceptable if the arrival temperature is within 2C of the required temperature or method specified range. For samples with a specified temperature of 4C, samples with a temperature ranging from just above freezing temperature of water to 6C shall be acceptable. Samples that are hand delivered immediately following collection may not meet these criteria, however they will be deemed acceptable according to NELAC standards, if there is evidence that the chilling process has begun, such as arrival on ice, etc.

VOLATILE ORGANICS

Samples 460-71114-2 through 460-71114-30 were analyzed for Volatile organics in accordance with EPA SW-846 Methods 8260C. The samples were prepared on 02/14/2014 and 02/17/2014 and analyzed on 02/19/2014, 02/20/2014, 02/21/2014, 02/22/2014 and 02/24/2014.

Acetone was detected in method blank MB 460-208752/7 at a level exceeding the reporting limit. If the associated sample reported a result above the MDL and/or RL, the result has been "B" flagged. Acetone was detected in method blank MB 460-208908/7 at a level exceeding the reporting limit. If the associated sample reported a result above the MDL and/or RL, the result has been "B" flagged.

The continuing calibration verification (CCV) associated with batch 208431 recovered outside control limits for Dichlorodifluoromethane, Bromomethane, Trichlorofluoromethane, and Bromoform. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported.

The continuing calibration verification (CCV) associated with batch 208274 recovered outside control limits for 1,1,1-Trichloroethane, Acetone, Bromoform, Carbon tetrachloride, Chlorodibromomethane, and Trichloroethene. The samples associated with this CCV were non-detects for the affected analytes. The data has been qualified and reported.

The laboratory control sample (LCS) for batch 208274 recovered outside control limits for the following analyte: Bromoform. This analyte was not detected in the associated samples. The data has been flagged and reported.

The laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) for batch 208589 recovered outside control limits for the following analyte: Carbon disulfide. The LCSD recoveries were also outside control limits for 1,4-Dioxane and Methylene chloride. These analytes were biased high and were not detected in the associated sample(s); therefore, the data have been reported.

The continuing calibration verification (CCV) associated with batch 208589 recovered outside control limits for 1,4-Dioxane, Bromoform, Methyl acetate, Methylene chloride, Methyl tert-butyl ether, and Vinyl chloride. These analytes were not detected in the associated sample(s). The data has been qualified and reported.

The continuing calibration verification (CCV) associated with batch 208776 recovered outside control limits for 1,4-Dioxane, Acetone, Bromoform, Bromomethane, Chlorodibromomethane, Chloroethane, Dichlorodifluoromethane, and Vinyl chloride. The samples associated with this CCV were non-detects for the affected analytes. The data has been qualified and reported.

The laboratory control sample / laboratory control sample duplicate (LCS/LCSD) %RPD for batch 208776 recovered outside control limits for the following analyte: Acetone. The LCSD recovered outside control limits for the following analytes: Chloroethane and 1,4-Dioxane.

These analytes were biased high in the LCSD and were not detected in the associated samples; therefore, the data have been reported.

The continuing calibration verification (CCV) associated with batch 208371 recovered outside control limits for 2-Butanone, Bromoform, Bromomethane, Dichlorodifluoromethane, Methyl acetate, and Methyl tert-butyl ether. The samples associated with this CCV were non-detects for the affected analytes. The data has been qualified and reported.

The laboratory control sample (LCS) for batch 208371 recovered outside control limits for the following analytes: Bromoform and Chlorodibromomethane. These analytes were not detected in the associated samples. The data has been flagged and reported.

Surrogate Dibromofluoromethane recovery for the following sample was outside control limits: 29-EGF17(6') (460-71114-30). Surrogate recoveries for the other three system monitoring compounds were within control limits; therefore, re-analysis was not performed.

Surrogate Dibromofluoromethane recovery for the following sample was outside control limits: 29-EGH12(2.5') (460-71114-7). Surrogate recoveries for the other three system monitoring compounds were within control limits; therefore, re-analysis was not performed.

1,1,2-Trichloroethane, Bromoform, Carbon disulfide and Dibromochloromethane failed the recovery criteria low for the MS of sample 460-71107-9 in batch 460-208348. 1,1,2,2-Tetrachloroethane, 1,2-Dibromo-3-Chloropropane, Cyclohexane and Methylcyclohexane failed the recovery criteria high.

For the MSD of sample 460-71107-9 in batch 460-208274, 1,1,2-Trichloroethane and Bromoform failed the recovery criteria low. Several analytes failed the recovery criteria high. Also, 1,1,2-Trichloroethane exceeded the rpd limit.

Bromoform, Bromomethane, Dibromochloromethane and Methylcyclohexane failed the recovery criteria low for the MS of sample 460-71114-12 in batch 460-208274. Several analytes failed the recovery criteria high.

Several analytes failed the recovery criteria low for the MSD of sample 460-71114-12 in batch 460-208431. Several analytes exceeded the rpd limit.

Several analytes failed the recovery criteria low for the MS of sample 460-71165-33 in batch 460-208431. Several analytes failed the recovery criteria high.

Several analytes failed the recovery criteria low for the MSD of sample 460-71165-33 in batch 460-208371. 1,1,2,2-Tetrachloroethane, 1,2-Dibromo-3-Chloropropane and Methyl acetate failed the recovery criteria high.

Bromoform, Bromomethane and Dibromochloromethane failed the recovery criteria low for the MS of sample 460-71278-1 in batch 460-208371. Methylene Chloride and trans-1,2-Dichloroethene failed the recovery criteria high.

For the MSD of sample 460-71278-1 in batch 460-208371, Bromoform, Bromomethane and Dibromochloromethane failed the recovery criteria low. 4-Methyl-2-pentanone and Benzene failed the recovery criteria high. Also, Dichlorodifluoromethane and Freon TF exceeded the rpd limit.

Refer to the QC report for details.

The following samples were diluted to bring the concentration of target analytes within the calibration range: 29-EGF16(6') (460-71114-29), 29-EGF17(6') (460-71114-30), 29-EGG12(6') (460-71114-22), 29-EGG16(3') (460-71114-18), 29-EGH15(2') (460-71114-14), 29-EGH16(6') (460-71114-15), 29-EGH17(4.5') (460-71114-16). Elevated reporting limits (RLs) are provided.

The following samples were diluted to bring the concentration of target analytes within the calibration range: 29-EGG13(6.5') (460-71114-21), 29-EGG14(6') (460-71114-19), 29-EGG15(6') (460-71114-20), 29-EGG17(9') (460-71114-17). Elevated reporting limits (RLs) are provided.

The following sample(s) was diluted due to the abundance of non-target analytes: 29-EGF15(1.5') (460-71114-28). Elevated reporting limits (RLs) are provided.

The following sample(s) was diluted to bring the concentration of target analytes within the calibration range: 29-EGF13(6.5') (460-71114-26). Elevated reporting limits (RLs) are provided.

The following sample was diluted due to the abundance of non-target analytes: 29-EGI11(6') (460-71114-10). Elevated reporting limits (RLs) are provided.

The following samples were diluted to bring the concentration of target analytes within the calibration range: 29-EGH13(3') (460-71114-12), 29-EGI17(17.5') (460-71114-3). Elevated reporting limits (RLs) are provided.

The following samples were diluted to bring the concentration of target analytes within the calibration range: 29-EGF12(1.5') (460-71114-25), 29-EGF14(8') (460-71114-27). Elevated reporting limits (RLs) are provided.

The following samples were diluted to bring the concentration of target analytes within the calibration range: 29-EGH12(2.5') (460-71114-7), 29-EGH14(6') (460-71114-13), 29-EGI15(3') (460-71114-4). Elevated reporting limits (RLs) are provided.

No other difficulties were encountered during the Volatile organics analyses.

All other quality control parameters were within the acceptance limits.

VOLATILE ORGANICS

Sample 460-71114-1 was analyzed for Volatile organics in accordance with EPA SW-846 Methods 8260C. The samples were analyzed on 02/21/2014.

The continuing calibration verification (CCV) associated with batch 208617 recovered above the upper control limit for Dichlorodifluoromethane, Bromomethane, Chloroethane, and Trichlorofluoromethane. The sample(s) associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported.

The laboratory control sample duplicate (LCSD) for batch 208617 recovered outside control limits for the following analyte: Trichlorofluoromethane. This analyte was biased high in the LCSD and was not detected in the associated sample; therefore, the data have been reported.

Refer to the QC report for details.

No other difficulties were encountered during the Volatile organics analysis.

All other quality control parameters were within the acceptance limits.

PERCENT SOLIDS/PERCENT MOISTURE

Samples 460-71114-2 through 460-71114-30 were analyzed for percent solids/percent moisture in accordance with EPA Method CLPISM01.2 (Exhibit D). The samples were analyzed on 02/15/2014.

No difficulties were encountered during the %solids/moisture analyses.

All quality control parameters were within the acceptance limits.

SAMPLE SUMMARY

Client: TRC Environmental Corporation

Job Number: 460-71114-1

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
460-71114-1FB	FB021114	Water	02/11/2014 0900	02/12/2014 2000
460-71114-2	29-EGI16	Solid	02/11/2014 0930	02/12/2014 2000
460-71114-3	29-EGI17(17.5')	Solid	02/11/2014 0945	02/12/2014 2000
460-71114-4	29-EGI15(3')	Solid	02/11/2014 0955	02/12/2014 2000
460-71114-5	29-EGI14(9.6')	Solid	02/11/2014 1100	02/12/2014 2000
460-71114-6	29-EGI14(19.6')	Solid	02/11/2014 1110	02/12/2014 2000
460-71114-7	29-EGH12(2.5')	Solid	02/11/2014 1140	02/12/2014 2000
460-71114-8	29-EGI13(13')	Solid	02/11/2014 1145	02/12/2014 2000
460-71114-9	29-EGI12(2.5')	Solid	02/11/2014 1200	02/12/2014 2000
460-71114-10	29-EGI11(6')	Solid	02/11/2014 1220	02/12/2014 2000
460-71114-11	29-EGH11(8')	Solid	02/11/2014 1330	02/12/2014 2000
460-71114-12	29-EGH13(3')	Solid	02/11/2014 1340	02/12/2014 2000
460-71114-12MS	29-EGH13(3')	Solid	02/11/2014 1340	02/12/2014 2000
460-71114-12MSD	29-EGH13(3')	Solid	02/11/2014 1340	02/12/2014 2000
460-71114-13	29-EGH14(6')	Solid	02/11/2014 1400	02/12/2014 2000
460-71114-14	29-EGH15(2')	Solid	02/11/2014 1500	02/12/2014 2000
460-71114-15	29-EGH16(6')	Solid	02/11/2014 1515	02/12/2014 2000
460-71114-16	29-EGH17(4.5')	Solid	02/11/2014 1540	02/12/2014 2000
460-71114-17	29-EGG17(9')	Solid	02/11/2014 1555	02/12/2014 2000
460-71114-18	29-EGG16(3')	Solid	02/11/2014 1610	02/12/2014 2000
460-71114-19	29-EGG14(6')	Solid	02/11/2014 1620	02/12/2014 2000
460-71114-20	29-EGG15(6')	Solid	02/11/2014 1625	02/12/2014 2000
460-71114-21	29-EGG13(6.5')	Solid	02/11/2014 1640	02/12/2014 2000
460-71114-22	29-EGG12(6')	Solid	02/11/2014 1710	02/12/2014 2000
460-71114-23	29-EGG11(1.5')	Solid	02/11/2014 1810	02/12/2014 2000
460-71114-24	29-EGF11(0.16')	Solid	02/11/2014 1825	02/12/2014 2000
460-71114-25	29-EGF12(1.5')	Solid	02/11/2014 1835	02/12/2014 2000
460-71114-26	29-EGF13(6.5')	Solid	02/11/2014 1850	02/12/2014 2000
460-71114-27	29-EGF14(8')	Solid	02/11/2014 1905	02/12/2014 2000
460-71114-28	29-EGF15(1.5')	Solid	02/11/2014 1920	02/12/2014 2000
460-71114-29	29-EGF16(6')	Solid	02/11/2014 1930	02/12/2014 2000
460-71114-30	29-EGF17(6')	Solid	02/11/2014 1940	02/12/2014 2000

EXECUTIVE SUMMARY - Detections

Client: TRC Environmental Corporation

Job Number: 460-71114-1

Lab Sample ID / Analyte	Client Sample ID	Result	Qualifier	Reporting Limit	Units	Method
460-71114-2	**29-EGI16**					
Acetone		42		4.2	ug/Kg	8260C
2-Butanone		3.8	J	4.2	ug/Kg	8260C
Benzene		0.47	J	0.84	ug/Kg	8260C
Ethylbenzene		7.6		0.84	ug/Kg	8260C
Xylenes, Total		0.74	J	1.7	ug/Kg	8260C
Cyclohexane		3.6		0.84	ug/Kg	8260C
Isopropylbenzene		3.3		0.84	ug/Kg	8260C
Methylcyclohexane		3.6		0.84	ug/Kg	8260C
Percent Moisture		8.1		1.0	%	Moisture
Percent Solids		91.9		1.0	%	Moisture
460-71114-3	**29-EGI17(17.5')**					
Benzene		31	J	62	ug/Kg	8260C
Cyclohexane		130		62	ug/Kg	8260C
Isopropylbenzene		91		62	ug/Kg	8260C
Methylcyclohexane		600		62	ug/Kg	8260C
Percent Moisture		14.2		1.0	%	Moisture
Percent Solids		85.8		1.0	%	Moisture
460-71114-4	**29-EGI15(3')**					
1,1,1-Trichloroethane		240	J	460	ug/Kg	8260C
Benzene		230	J	460	ug/Kg	8260C
1,1,2,2-Tetrachloroethane		1500		460	ug/Kg	8260C
Ethylbenzene		14000		460	ug/Kg	8260C
Xylenes, Total		26000		910	ug/Kg	8260C
Cyclohexane		22000		460	ug/Kg	8260C
Isopropylbenzene		10000		460	ug/Kg	8260C
Methylcyclohexane		130000		460	ug/Kg	8260C
Percent Moisture		19.7		1.0	%	Moisture
Percent Solids		80.3		1.0	%	Moisture
460-71114-5	**29-EGI14(9.6')**					
Acetone		18	B	5.0	ug/Kg	8260C
Carbon disulfide		0.15	J	1.0	ug/Kg	8260C
Benzene		1.0		1.0	ug/Kg	8260C
Toluene		0.32	J	1.0	ug/Kg	8260C
Cyclohexane		61		1.0	ug/Kg	8260C
Isopropylbenzene		17		1.0	ug/Kg	8260C
Methylcyclohexane		58		1.0	ug/Kg	8260C
Percent Moisture		17.1		1.0	%	Moisture
Percent Solids		82.9		1.0	%	Moisture

EXECUTIVE SUMMARY - Detections

Client: TRC Environmental Corporation

Job Number: 460-71114-1

Lab Sample ID / Analyte	Client Sample ID	Result	Qualifier	Reporting Limit	Units	Method
460-71114-6	**29-EGI14(19.6')**					
Acetone		20		4.4	ug/Kg	8260C
Carbon disulfide		0.22	J	0.88	ug/Kg	8260C
Benzene		0.90		0.88	ug/Kg	8260C
Cyclohexane		47		0.88	ug/Kg	8260C
Isopropylbenzene		11		0.88	ug/Kg	8260C
Methylcyclohexane		46		0.88	ug/Kg	8260C
Percent Moisture		15.5		1.0	%	Moisture
Percent Solids		84.5		1.0	%	Moisture
460-71114-7	**29-EGH12(2.5')**					
1,1,1-Trichloroethane		54	J	94	ug/Kg	8260C
1,1,2,2-Tetrachloroethane		960		94	ug/Kg	8260C
Ethylbenzene		1500		94	ug/Kg	8260C
Xylenes, Total		5700		190	ug/Kg	8260C
Cyclohexane		4500		94	ug/Kg	8260C
Isopropylbenzene		2700		94	ug/Kg	8260C
Methylcyclohexane		34000		94	ug/Kg	8260C
Percent Moisture		15.2		1.0	%	Moisture
Percent Solids		84.8		1.0	%	Moisture
460-71114-8	**29-EGI13(13')**					
Acetone		41	B	4.6	ug/Kg	8260C
Carbon disulfide		0.73	J	0.91	ug/Kg	8260C
2-Butanone		3.1	J	4.6	ug/Kg	8260C
Benzene		3.9		0.91	ug/Kg	8260C
Toluene		0.42	J	0.91	ug/Kg	8260C
Ethylbenzene		0.80	J	0.91	ug/Kg	8260C
Cyclohexane		50		0.91	ug/Kg	8260C
Isopropylbenzene		13		0.91	ug/Kg	8260C
Methylcyclohexane		110		0.91	ug/Kg	8260C
Percent Moisture		16.4		1.0	%	Moisture
Percent Solids		83.6		1.0	%	Moisture

EXECUTIVE SUMMARY - Detections

Client: TRC Environmental Corporation

Job Number: 460-71114-1

Lab Sample ID / Analyte	Client Sample ID	Result	Qualifier	Reporting Limit	Units	Method
460-71114-9	**29-EGI12(2.5')**					
Acetone		38	B	4.1	ug/Kg	8260C
Carbon disulfide		0.21	J	0.82	ug/Kg	8260C
2-Butanone		3.4	J	4.1	ug/Kg	8260C
Benzene		0.35	J	0.82	ug/Kg	8260C
Cyclohexane		4.4		0.82	ug/Kg	8260C
Isopropylbenzene		2.6		0.82	ug/Kg	8260C
Methylcyclohexane		5.3		0.82	ug/Kg	8260C
Percent Moisture		12.7		1.0	%	Moisture
Percent Solids		87.3		1.0	%	Moisture
460-71114-10	**29-EGI11(6')**					
Ethylbenzene		38	J	85	ug/Kg	8260C
Cyclohexane		89		85	ug/Kg	8260C
Isopropylbenzene		120		85	ug/Kg	8260C
Methylcyclohexane		170		85	ug/Kg	8260C
Percent Moisture		13.1		1.0	%	Moisture
Percent Solids		86.9		1.0	%	Moisture
460-71114-11	**29-EGH11(8')**					
Acetone		46	B	4.4	ug/Kg	8260C
Carbon disulfide		0.43	J	0.88	ug/Kg	8260C
2-Butanone		2.9	J	4.4	ug/Kg	8260C
Cyclohexane		0.26	J	0.88	ug/Kg	8260C
Methylcyclohexane		0.31	J	0.88	ug/Kg	8260C
Percent Moisture		15.7		1.0	%	Moisture
Percent Solids		84.3		1.0	%	Moisture
460-71114-12	**29-EGH13(3')**					
Cyclohexane		4800		87	ug/Kg	8260C
Isopropylbenzene		480		87	ug/Kg	8260C
Methylcyclohexane		15000		87	ug/Kg	8260C
Percent Moisture		13.9		1.0	%	Moisture
Percent Solids		86.1		1.0	%	Moisture
460-71114-13	**29-EGH14(6')**					
Cyclohexane		5600		120	ug/Kg	8260C
Isopropylbenzene		1300		120	ug/Kg	8260C
Methylcyclohexane		22000		120	ug/Kg	8260C
Percent Moisture		19.4		1.0	%	Moisture
Percent Solids		80.6		1.0	%	Moisture

EXECUTIVE SUMMARY - Detections

Client: TRC Environmental Corporation

Job Number: 460-71114-1

Lab Sample ID / Analyte	Client Sample ID	Result	Qualifier	Reporting Limit	Units	Method
460-71114-14	**29-EGH15(2')**					
Ethylbenzene		550		210	ug/Kg	8260C
Xylenes, Total		240	J	410	ug/Kg	8260C
Cyclohexane		23000		210	ug/Kg	8260C
Isopropylbenzene		660		210	ug/Kg	8260C
Methylcyclohexane		52000		210	ug/Kg	8260C
Percent Moisture		13.5		1.0	%	Moisture
Percent Solids		86.5		1.0	%	Moisture
460-71114-15	**29-EGH16(6')**					
Benzene		500	J	1000	ug/Kg	8260C
Ethylbenzene		5300		1000	ug/Kg	8260C
Cyclohexane		73000		1000	ug/Kg	8260C
Isopropylbenzene		18000		1000	ug/Kg	8260C
Methylcyclohexane		300000		1000	ug/Kg	8260C
Percent Moisture		16.8		1.0	%	Moisture
Percent Solids		83.2		1.0	%	Moisture
460-71114-16	**29-EGH17(4.5')**					
Benzene		810		180	ug/Kg	8260C
Ethylbenzene		150	J	180	ug/Kg	8260C
Xylenes, Total		77	J	350	ug/Kg	8260C
Cyclohexane		16000		180	ug/Kg	8260C
Isopropylbenzene		3100		180	ug/Kg	8260C
Methylcyclohexane		49000		180	ug/Kg	8260C
Percent Moisture		12.2		1.0	%	Moisture
Percent Solids		87.8		1.0	%	Moisture
460-71114-17	**29-EGG17(9')**					
Benzene		700		390	ug/Kg	8260C
Ethylbenzene		15000		390	ug/Kg	8260C
Xylenes, Total		510	J	770	ug/Kg	8260C
Cyclohexane		27000		390	ug/Kg	8260C
Isopropylbenzene		7600		390	ug/Kg	8260C
Methylcyclohexane		140000		390	ug/Kg	8260C
Percent Moisture		9.1		1.0	%	Moisture
Percent Solids		90.9		1.0	%	Moisture

EXECUTIVE SUMMARY - Detections

Client: TRC Environmental Corporation

Job Number: 460-71114-1

Lab Sample ID / Analyte	Client Sample ID	Result	Qualifier	Reporting Limit	Units	Method
460-71114-18	**29-EGG16(3')**					
Benzene		92		80	ug/Kg	8260C
Ethylbenzene		440		80	ug/Kg	8260C
Xylenes, Total		49	J	160	ug/Kg	8260C
Cyclohexane		2300		80	ug/Kg	8260C
Isopropylbenzene		250		80	ug/Kg	8260C
Methylcyclohexane		7100		80	ug/Kg	8260C
Percent Moisture		8.4		1.0	%	Moisture
Percent Solids		91.6		1.0	%	Moisture
460-71114-19	**29-EGG14(6')**					
Ethylbenzene		740	J	900	ug/Kg	8260C
Cyclohexane		47000		900	ug/Kg	8260C
Isopropylbenzene		6100		900	ug/Kg	8260C
Methylcyclohexane		170000		900	ug/Kg	8260C
Percent Moisture		12.6		1.0	%	Moisture
Percent Solids		87.4		1.0	%	Moisture
460-71114-20	**29-EGG15(6')**					
Ethylbenzene		14000		860	ug/Kg	8260C
Xylenes, Total		9800		1700	ug/Kg	8260C
Cyclohexane		54000		860	ug/Kg	8260C
Isopropylbenzene		10000		860	ug/Kg	8260C
Methylcyclohexane		210000		860	ug/Kg	8260C
Percent Moisture		13.9		1.0	%	Moisture
Percent Solids		86.1		1.0	%	Moisture
460-71114-21	**29-EGG13(6.5')**					
Ethylbenzene		18000		1100	ug/Kg	8260C
Xylenes, Total		2000	J	2200	ug/Kg	8260C
Cyclohexane		53000		1100	ug/Kg	8260C
Isopropylbenzene		13000		1100	ug/Kg	8260C
Methylcyclohexane		240000		1100	ug/Kg	8260C
Percent Moisture		15.5		1.0	%	Moisture
Percent Solids		84.5		1.0	%	Moisture

EXECUTIVE SUMMARY - Detections

Client: TRC Environmental Corporation

Job Number: 460-71114-1

Lab Sample ID / Analyte	Client Sample ID	Result	Qualifier	Reporting Limit	Units	Method
460-71114-22	**29-EGG12(6')**					
Ethylbenzene		2300		95	ug/Kg	8260C
Xylenes, Total		1800		190	ug/Kg	8260C
Cyclohexane		3300		95	ug/Kg	8260C
Isopropylbenzene		990		95	ug/Kg	8260C
Methylcyclohexane		15000		95	ug/Kg	8260C
Percent Moisture		13.8		1.0	%	Moisture
Percent Solids		86.2		1.0	%	Moisture
460-71114-23	**29-EGG11(1.5')**					
Acetone		14	B	5.3	ug/Kg	8260C
Toluene		0.17	J	1.1	ug/Kg	8260C
Ethylbenzene		0.27	J	1.1	ug/Kg	8260C
Cyclohexane		0.70	J	1.1	ug/Kg	8260C
Methylcyclohexane		2.9		1.1	ug/Kg	8260C
Percent Moisture		7.9		1.0	%	Moisture
Percent Solids		92.1		1.0	%	Moisture
460-71114-24	**29-EGF11(0.16')**					
Acetone		13	B	4.3	ug/Kg	8260C
2-Butanone		1.3	J	4.3	ug/Kg	8260C
Cyclohexane		0.58	J	0.86	ug/Kg	8260C
Methyl acetate		3.3	J	4.3	ug/Kg	8260C
Methylcyclohexane		1.7		0.86	ug/Kg	8260C
Percent Moisture		8.8		1.0	%	Moisture
Percent Solids		91.2		1.0	%	Moisture
460-71114-25	**29-EGF12(1.5')**					
Ethylbenzene		3300		340	ug/Kg	8260C
Xylenes, Total		460	J	680	ug/Kg	8260C
Isopropylbenzene		2400		340	ug/Kg	8260C
Methylcyclohexane		88000		340	ug/Kg	8260C
Percent Moisture		12.3		1.0	%	Moisture
Percent Solids		87.7		1.0	%	Moisture
460-71114-26	**29-EGF13(6.5')**					
Ethylbenzene		7600		440	ug/Kg	8260C
Cyclohexane		54000		440	ug/Kg	8260C
Isopropylbenzene		4600		440	ug/Kg	8260C
Methylcyclohexane		180000		440	ug/Kg	8260C
Percent Moisture		14.0		1.0	%	Moisture
Percent Solids		86.0		1.0	%	Moisture

EXECUTIVE SUMMARY - Detections

Client: TRC Environmental Corporation

Job Number: 460-71114-1

Lab Sample ID / Analyte	Client Sample ID	Result	Qualifier	Reporting Limit	Units	Method
460-71114-27	**29-EGF14(8')**					
Benzene		220	J	970	ug/Kg	8260C
Ethylbenzene		1600		970	ug/Kg	8260C
Cyclohexane		84000		970	ug/Kg	8260C
Isopropylbenzene		18000		970	ug/Kg	8260C
Methylcyclohexane		330000		970	ug/Kg	8260C
Percent Moisture		8.1		1.0	%	Moisture
Percent Solids		91.9		1.0	%	Moisture
460-71114-28	**29-EGF15(1.5')**					
Ethylbenzene		12	J	84	ug/Kg	8260C
Xylenes, Total		31	J	170	ug/Kg	8260C
Isopropylbenzene		18	J	84	ug/Kg	8260C
Methylcyclohexane		240		84	ug/Kg	8260C
Percent Moisture		11.8		1.0	%	Moisture
Percent Solids		88.2		1.0	%	Moisture
460-71114-29	**29-EGF16(6')**					
Benzene		260		85	ug/Kg	8260C
Ethylbenzene		5100		85	ug/Kg	8260C
Cyclohexane		12000		85	ug/Kg	8260C
Isopropylbenzene		1600		85	ug/Kg	8260C
Methylcyclohexane		41000		85	ug/Kg	8260C
Percent Moisture		12.0		1.0	%	Moisture
Percent Solids		88.0		1.0	%	Moisture
460-71114-30	**29-EGF17(6')**					
Benzene		380		180	ug/Kg	8260C
Ethylbenzene		10000		180	ug/Kg	8260C
Cyclohexane		11000		180	ug/Kg	8260C
Isopropylbenzene		5000		180	ug/Kg	8260C
Methylcyclohexane		61000		180	ug/Kg	8260C
Percent Moisture		11.3		1.0	%	Moisture
Percent Solids		88.7		1.0	%	Moisture

METHOD SUMMARY

Client: TRC Environmental Corporation

Job Number: 460-71114-1

Description	Lab Location	Method	Preparation Method
Matrix: Solid			
Volatile Organic Compounds by GC/MS	TAL EDI	SW846 8260C	
Closed System Purge and Trap	TAL EDI		SW846 5035
Percent Moisture	TAL EDI	EPA Moisture	
Matrix: Water			
Volatile Organic Compounds by GC/MS	TAL EDI	SW846 8260C	
Purge and Trap	TAL EDI		SW846 5030C

Lab References:

TAL EDI = TestAmerica Edison

Method References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Shipping and Receiving Documents

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

777 New Durham Road
Edison, New Jersey 08817
Phone: (732) 549-3900 Fax: (732) 549-3679

CHAIN OF C

460-71114 Chain of Custody

02/26/2014

Name (for report and invoice) Mark Wilbourne	Samplers Name (Printed) R. Nevon	Site/Project Identification Area 29 Remedial Enhancement Investigation
Company TRC	P. O. # 65643	State (Location of site): NJ: ☒ NY: ☐ Other:
		~~Regulatory Program:~~ NJ Reduced QA Level
Address 21 Griffin Rd N.	Analysis Turnaround Time: Standard ☒	
City Windsor State CT 06095	Rush Charges Authorized For: 2 Week ☐ 1 Week ☐ Other ☐	
Phone 860-305-5903 Fax		

Sample Identification	Date	Time	Matrix	No. of Cont.	TCL VOA (8260C)	TCL VOA (8260/5035)	LAB USE ONLY Sample Numbers
FS021114	2/11/14	0900	Aq	3	X		-1
29-EGI16		0930	Soil	4		X	-2
29-EGI17 (17.5')		0945		4		X	-3
29-EGI15 (3')		0955		4		X	-4
29-EGI14 (9.6')		1100		4		X	-5
29-EGI14 (19.6')		1110		4		X	-6
29-EGH12 (2.5')		1140		4		X	-7
29-EGI13 (13')		1145		4		X	-8
29-EGI12 (2.5')		1200		4		X	-9
29-EGI11 (6')	2/11/14	1220	Soil	4		X	-10

SHORT HOLD

Job No: 71114

Preservation Used: 1 = ICE, 2 = HCl, 3 = H_2SO_4, 4 = HNO_3, 5 = NaOH, 6 = Other Frozen, 7 = Other MeOH/DI

Soil: ~~1~~, 6, 7

Water: 1, 2, ~~6~~, 7, ~~10~~

Special Instructions: EDDs Required: NJ Hazsite, EQuIS EPA R2/FAA, TRC-CT Water Metals Filtered (Yes/No)? N/A

Relinquished by	Company	Date / Time	Received by	Company
1)	TRC	2/12/14 1405	1)	TA 2/12 1405
2)	TA	2/13 1830	2)	
3)		2/13 2000	3) C. Hall 2/12/14	2000 TA
4)			4)	

Laboratory Certifications: New Jersey (12028), New York (11452), Pennsylvania (68-522), Connecticut (PH-0200), Rhode Island (132). TAL - 0016 (0408)

Massachusetts (M-NJ312), North Carolina (No. 578)

DW#4. 1/1, 1 DS

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Edison, New Jersey 08817
Phone: (732) 549-3900 Fax: (732) 549-3679

CHAIN OF CUSTODY / ANALYSIS REQUEST

Name (for report and invoice) Mark Winbourne	Samplers Name (Printed) R. Never	Site/Project Identification Area 29 Rowlett Enhancement Dredging
Company TRC	P. O. # 65643	State (Location of site): NJ: ☒ NY: ☐ Other:
		Regulatory Program: QA Level 3 NJ Reduced
Address 21 Griffin Rd. N.	Analysis Turnaround Time: Standard ☒	
City Windsor State CT 06095	Rush Charges Authorized For: 2 Week ☐ 1 Week ☐ Other ☐	
Phone 860-305-5903 Fax		

Sample Identification	Date	Time	Matrix	No. of Cont.	TCL VOCs (8260 Soils)	MS/MSD Vol. Provided	LAB USE ONLY Project No: 71114 Sample Numbers
29-EGH11(8')	2/11/14	1330	Soil	4	X		-11
29-EGH13(3')		1340	Soil	12	X	X	-12
29-EGH14(6')		1400	Soil	4	X		-13
29-EGH15(2')		1500	Soil	4	X		-14
29-EGH16(6')		1515	Soil	4	X		-15
29-EGH17(4.5')		1540	Soil	4	X		-16
29-EGG17(9')		1555	Soil	4	X		-17
29-EGG16(3')		1610	Soil	4	X		-18
29-EGG14(6')		1620	Soil	4	X		-19
29-EGG15(6')		1625	Soil	4	X		-20

Preservation Used: 1 = ICE, 2 = HCl, 3 = H_2SO_4, 4 = HNO_3, 5 = NaOH 6 = Other Frozen, 7 = Other MeOH/DI — Soil: 6,7 Water:

Special Instructions: EDD Required: EQuIS EPAR2/FAA; NJ Hazsite; TRC-CT — Water Metals Filtered (Yes/No)?

Relinquished by	Company	Date / Time	Received by	Company
1)	TRC	2/12/14 1405	1)	2/12 1405
2)		2/12 1830	2)	
3)		2/13 0700	3)	TA 2/13/14
4)			4)	

Laboratory Certifications: New Jersey (12028), New York (11452), Pennsylvania (68-522), Connecticut (PH-0200), Rhode Island (132). TAL - 0016 (0408)

Massachusetts (M-NJ312), North Carolina (No. 578)

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THE LEADER IN ENVIRONMENTAL TESTING

CHAIN OF CUSTODY / ANALYSIS REQUEST

Name (for report and invoice) Mark Winbourne	Samplers Name (Printed) R. Nevow	Site/Project Identification Area 29 Remedial Enhancement Investigation
Company TRC	P. O. # 65643	State (Location of site): NJ: X NY: Other:
		~~Regulatory Program:~~ QA Level: NJ Reduced
Address 21 Griffin Rd. N.	Analysis Turnaround Time: Standard X	
City Windsor State CT 06095	Rush Charges Authorized For: 2 Week / 1 Week / Other	
Phone 860-305-5903 Fax		

ANALYSIS REQUESTED (ENTER "X" BELOW TO INDICATE REQUEST)

LAB USE ONLY
Project No:
Job No: 71114

Sample Identification	Date	Time	Matrix	No. of Cont.	TCL VOCs (8260/5035)										Sample Numbers
29-EGG13(6.5')	2/11/14	1640	Soil	4	X										-21
29-EGG12(6')	"	1710	Soil	4	X										-22
29-EGG11(1.5')		1810	Soil	4	X										-23
29-EGF11(0.16')		1825	Soil	4	X										-24
29-EGF12(1.5')		1835	Soil	4	X										-25
29-EGF13(6.5')		1850	Soil	4	X										-26
29-EGF14(8')		1905	Soil	4	X										-27
29-EGF15(1.5')		1920	Soil	4	X										-28
29-EGF16(6')		1930	Soil	4	X										-29
29-EGF17(6')	2/11/14	1940	Soil	4	X										-30
				Soil:	6,7										
				Water:											

Preservation Used: 1 = ICE, 2 = HCl, 3 = H_2SO_4, 4 = HNO_3, 5 = NaOH
6 = Other Frozen, 7 = Other MeOH/DI

Special Instructions

Water Metals Filtered (Yes/No)?

	Company	Date / Time		Company
Relinquished by 1)	TRC	2/12/14 1405	Received by 1)	TA GLS 1405
Relinquished by 2)	TRC	2/13 1800	Received by 2)	
Relinquished by 3)		2/13/14	Received by 3)	TA 2/12/14
Relinquished by 4)	Company	Date / Time	Received by 4)	Company

Laboratory Certifications: New Jersey (12028), New York (11452), Pennsylvania (68-522), Connecticut (PH-0200), Rhode Island (132). TAL - 0016 (0408)

Massachusetts (M-NJ312), North Carolina (No. 578)

TestAmerica Edison Receipt Temperature and pH Log

Job Number: 71114

Number of Coolers: 2 IR Gun # 9

Temp. Cooler #1 (Deg C) (Raw/Corrected): 4.2 / 4.1 Temp. Cooler #4 (Deg C) (Raw/Corrected): ____ Temp. Cooler #7 (Deg C) (Raw/Corrected): ____

Temp. Cooler #2 (Deg C) (Raw/Corrected): 4.1 / 4.1 Temp. Cooler #5 (Deg C) (Raw/Corrected): ____ Temp. Cooler #8 (Deg C) (Raw/Corrected): ____

Temp. Cooler #3 (Deg C) (Raw/Corrected): ____ Temp. Cooler #6 (Deg C) (Raw/Corrected): ____ Temp. Cooler #9 (Deg C) (Raw/Corrected): ____

Sample No.	Ammonia (pH<2)	COD (pH<2)	Nitrate Nitrite (pH<2)	*Metals (pH<2)	Pest (pH 5-9)	PHC (pH<2)	Phenols (pH<2)	Sulfide (pH>9)	TKN (pH<2)	TOC (pH<2)	Total Cyanide (pH>12)	Total Phos (pH<2)	Other

If pH adjustments are required record the information below:

Sample No(s). adjusted: ____

Preservative Name/Conc.: ____ Volume of Preservative used (ml): ____

Lot # of Preservative: ____ Expiration Date: ____

Project Manager and the Department Manager should be notified about the samples which were pH adjusted.

** Samples for Metal analysis which are out of compliance must be acidified at least 24 hours prior to analysis.*

Initials: ____ Date: 2/12/14

Login Sample Receipt Checklist

Client: TRC Environmental Corporation

Job Number: 460-71114-1

Login Number: 71114
List Number: 1
Creator: Rivera, Kenneth

List Source: TestAmerica Edison

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	N/A	Not present
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	1.1°C, 1.1°C, IR #4
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	N/A	
Samples do not require splitting or compositing.	N/A	
Residual Chlorine Checked.	N/A	No analysis requiring residual chlorine check assigned.

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THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

Job Number: 460-71165-1

Job Description: Area 29 Remedial Enhancement Investigati

For:
TRC Environmental Corporation
21 Griffin Road North
Windsor, CT 06095

Attention: Mr. Mark Winbourne

Approved for release.
Sarah E Brown
Project Mgmt. Assistant
2/28/2014 5:59 PM

Designee for
Melissa Haas, Project Manager I
777 New Durham Road, Edison, NJ, 08817
(203)944-1310
melissa.haas@testamericainc.com
02/28/2014

TestAmerica Edison Certifications and Approvals: Connecticut: CTDOH #PH-0200, New Jersey: NJDEP (NELAP) #12028, New York: NYDOH (NELAP) #11452, NYDOH (ELAP) #11452, Pennsylvania: PADEP (NELAP) 68-00522 and Rhode Island: RIDOH LAO00132

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CASE NARRATIVE

Client: TRC Environmental Corporation

Project: Area 29 Remedial Enhancement Investigati

Report Number: 460-71165-1

This case narrative is in the form of an exception report, where only the anomalies related to this report, method specific performance and/or QA/QC issues are discussed. If there are no issues to report, this narrative will include a statement that documents that there are no relevant data issues.

It should be noted that samples with elevated Reporting Limits (RLs) as a result of a dilution may not be able to satisfy customer reporting limits in some cases. Such increases in the RLs are unavoidable but acceptable consequence of sample dilution that enables quantification of target analytes or interferences which exceed the calibration range of the instrument.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

RECEIPT
The samples were received on 2/14/2014 4:30 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 0.1° C and 2.1° C.

Except:

The following sample was submitted for analysis; however, it was not listed on the Chain-of-Custody (COC): 29-WGS28(7.0') (460-71165-36). The client was contacted and confirmed that the sample should be analyzed.

Note: All samples which require thermal preservation are considered acceptable if the arrival temperature is within 2C of the required temperature or method specified range. For samples with a specified temperature of 4C, samples with a temperature ranging from just above freezing temperature of water to 6C shall be acceptable. Samples that are hand delivered immediately following collection may not meet these criteria, however they will be deemed acceptable according to NELAC standards, if there is evidence that the chilling process has begun, such as arrival on ice, etc.

DIESEL RANGE ORGANICS
Samples 460-71165-32 through 460-71165-35 were analyzed for Diesel Range Organics in accordance with EPA SW-846 Method 8015D_DRO. The samples were prepared on 02/19/2014 and analyzed on 02/20/2014 and 02/21/2014.

#2 Diesel Fuel failed the recovery criteria low for the MS and MSD of sample 460-71165-33 in batch 460-208639. #2 Diesel Fuel exceeded the rpd limit.

Refer to the QC report for details.

Sample 460-71165-33(5X) required dilution prior to analysis. The reporting limits have been adjusted accordingly.

The following samples were diluted to bring the concentration of target analytes within the calibration range: 29-GPBT6(6-8') (460-71165-33), 29-GPBT6(6-8') (460-71165-33 MS), 29-GPBT6(6-8') (460-71165-33 MSD). Elevated reporting limits (RLs) are provided.

No other difficulties were encountered during the DRO analyses.

All other quality control parameters were within the acceptance limits.

DIESEL RANGE ORGANICS
Samples 460-71165-32 through 460-71165-35 were analyzed for Diesel Range Organics in accordance with EPA SW-846 Method 8015B - DRO. The samples were prepared on 02/18/2014 and analyzed on 02/26/2014.

No difficulties were encountered during the Diesel Range Organics analyses.

All quality control parameters were within the acceptance limits.

VOLATILE ORGANICS
Samples 460-71165-1 through 460-71165-18 and 460-71165-20 through 460-71165-36 were analyzed for Volatile organics in accordance with EPA SW-846 Methods 8260C. The samples were prepared on 02/17/2014 and analyzed on 02/19/2014, 02/20/2014, 02/21/2014, 02/22/2014, 02/24/2014 and 02/25/2014.

Acetone was detected in method blank MB 460-208774/6 at a level that was above the method detection limit but below the reporting limit. The value should be considered an estimate, and has been flagged "J". If the associated sample reported a result above the MDL and/or RL, the result has been "B" flagged.

Acetone was detected in method blank MB 460-209164/6 at a level that was above the method detection limit but below the reporting limit. The value should be considered an estimate, and has been flagged "J". If the associated sample reported a result above the MDL and/or RL, the result has been "B" flagged.

The laboratory control sample (LCS) for batch 208259 recovered outside control limits for the following analytes: Carbon tetrachloride, 1,1,1-Trichloroethane, and 1,4-Dioxane. These analytes were biased high in the LCS and were not detected in the associated samples; therefore, the data have been reported.

The laboratory control sample (LCS) for batch 208368 recovered outside control limits for the following analytes: 1,1,2,2-Tetrachloroethane, Bromomethane and 1,4-Dioxane. These analytes were not detected in the associated samples; therefore, the data have been flagged and reported.

The laboratory control sample (LCS) for batch 208583 recovered outside control limits for the following analytes: 1,1,2,2-Tetrachloroethane, 1,4-Dioxane, and Bromomethane. These analytes were not detected in the associated samples. The data has been flagged and reported.

The laboratory control sample / laboratory control sample duplicate (LCS/LCSD) %RPD for batch 209164 recovered outside control limits for the following analytes: 2-Butanone and 1,4-Dioxane. The LCS recovery was outside control limits for 1,4-Dioxane. This analyte was biased high in the LCS and was not detected in the associated samples. The data has been flagged and reported.

Bromomethane and Methylcyclohexane failed the recovery criteria low for the MS of sample 460-71165-14 in batch 460-208583. 1,1,2-Trichloroethane and 4-Methyl-2-pentanone failed the recovery criteria high.

For the MSD of sample 460-71165-14 in batch 460-208938, Bromomethane failed the recovery criteria low. 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,4-Dioxane and 4-Methyl-2-pentanone failed the recovery criteria high. Also, 1,4-Dioxane and Acetone exceeded the rpd limit.

Isopropylbenzene and Methylcyclohexane failed the recovery criteria low for the MS of sample 460-71165-21 in batch 460-208938.

For the MSD of sample 460-71165-21 in batch 460-208431, several analytes failed the recovery criteria low. 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane and 1,2-Dibromo-3-Chloropropane failed the recovery criteria high. Also, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane and 1,2-Dibromo-3-Chloropropane exceeded the rpd limit.

Several analytes failed the recovery criteria high and low for the MS and MSD of sample 460-71165-33 in batch 460-208431. Several analytes failed the recovery criteria high.

1,1,2,2-Tetrachloroethane, 1,4-Dioxane, 4-Methyl-2-pentanone and Bromoform failed the recovery criteria low for the MS of sample 460-71165-3 in batch 460-208259. Bromomethane failed the recovery criteria high.

1,1,2,2-Tetrachloroethane and 4-Methyl-2-pentanone failed the recovery criteria low for the MSD of sample 460-71165-3 in batch 460-209384. Bromomethane failed the recovery criteria high.

The continuing calibration verification (CCV) associated with batch 208259 recovered outside control limits for 2-Hexanone, 4-Methyl-2-pentanone, and 1,4-Dioxane. The samples associated with this CCV were non-detects for the affected analytes. The data has been qualified and reported.

The continuing calibration verification (CCV) associated with batch 208368 recovered outside control limit for several analytes. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported.

The continuing calibration verification (CCV) associated with batch 208583 recovered outside control limits for 1,1,2,2-Tetrachloroethane, 1,2-Dibromo-3-Chloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-pentanone, Acetone, and Bromomethane. The samples associated with this CCV were non-detects for the affected analytes. The data has been qualified and reported.

The continuing calibration verification (CCV) associated with batch 208431 recovered outside control limits for Dichlorodifluoromethane, Bromomethane, Trichlorofluoromethane, and Bromoform. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported.

The continuing calibration verification (CCV) associated with batch 208774 recovered outside control limits for Acetone, 2-Butanone, Dichlorodifluoromethane, and Methyl acetate. The data has been qualified and reported.

The continuing calibration verification (CCV) associated with batch 208938 recovered outside control limit for Dichlorodifluoromethane. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported.

The continuing calibration verification (CCV) associated with batch 209164 recovered outside control limits for 1,4-Dioxane and

Dichlorodifluoromethane. The samples associated with this CCV were non-detects for the affected analytes. The data has been qualified and reported.

Refer to the QC report for details.

The following samples were diluted to bring the concentration of target analytes within the calibration range: 29-WGT28(6.0') (460-71165-13), 29-WGT23(7.5') (460-71165-20), 29-WGT26(6.5') (460-71165-15), 29-WGT27(6.5') (460-71165-14), 29-WGS25(6.0') (460-71165-8), 29-WGS26(6.0') (460-71165-9), 29-WGS27(6.0') (460-71165-10), 29-WGR22(13.5') (460-71165-2), 29-WGR23(6.5') (460-71165-1), 29-WGS23(10.5') (460-71165-6), 29-WGS24(6.5') (460-71165-7). Elevated reporting limits (RLs) are provided.

The following samples were diluted due to the abundance of target and/or non-target analytes: 29-GPBT6(6-8') (460-71165-33), 29-WGS28(7.0') (460-71165-36), 29-WGT24(17.5') (460-71165-18), 29-WGT24(7.5') (460-71165-17), 29-WGT25(6.5') (460-71165-16), 29-WGU28(2.0') (460-71165-31), 29-WGU29(3.0') (460-71165-30), 29-WGU27(7.6') (460-71165-29). Elevated reporting limits (RLs) are provided.

No other difficulties were encountered during the Volatile organics analyses.

All other quality control parameters were within the acceptance limits.

VOLATILE ORGANICS

Sample 460-71165-19 was analyzed for Volatile organics in accordance with EPA SW-846 Methods 8260C. The samples were analyzed on 02/26/2014.

Bromomethane, Chloromethane, Dichlorodifluoromethane and Vinyl chloride exceeded the rpd limit for the MSD of sample 460-71609-1 in batch 460-209384.

The continuing calibration verification (CCV) associated with batch 209384 recovered outside control limit for Cyclohexane, Dichlorodifluoromethane and 1,1,2-Trichloro-1,2,2-trifluoroethane. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported.

Refer to the QC report for details.

No other difficulties were encountered during the Volatile organics analysis.

All other quality control parameters were within the acceptance limits.

PERCENT SOLIDS/PERCENT MOISTURE

Samples 460-71165-1 through 460-71165-18 and 460-71165-20 through 460-71165-36 were analyzed for percent solids/percent moisture in accordance with EPA Method CLPISM01.2 (Exhibit D). The samples were analyzed on 02/17/2014.

No difficulties were encountered during the %solids/moisture analyses.

All quality control parameters were within the acceptance limits.

SAMPLE SUMMARY

Client: TRC Environmental Corporation

Job Number: 460-71165-1

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
460-71165-1	29-WGR23(6.5')	Solid	02/12/2014 1410	02/14/2014 1630
460-71165-2	29-WGR22(13.5')	Solid	02/12/2014 1435	02/14/2014 1630
460-71165-3	29-WGR21(2.5')	Solid	02/12/2014 1450	02/14/2014 1630
460-71165-4	29-WGS21(1.0')	Solid	02/12/2014 1505	02/14/2014 1630
460-71165-5	29-WGS22(8.5')	Solid	02/12/2014 1520	02/14/2014 1630
460-71165-6	29-WGS23(10.5')	Solid	02/12/2014 1530	02/14/2014 1630
460-71165-7	29-WGS24(6.5')	Solid	02/12/2014 1545	02/14/2014 1630
460-71165-8	29-WGS25(6.0')	Solid	02/12/2014 1600	02/14/2014 1630
460-71165-9	29-WGS26(6.0')	Solid	02/12/2014 1615	02/14/2014 1630
460-71165-10	29-WGS27(6.0')	Solid	02/12/2014 1620	02/14/2014 1630
460-71165-11	29-WGS29(2.3')	Solid	02/12/2014 1640	02/14/2014 1630
460-71165-12	29-WGT29(6.0')	Solid	02/12/2014 1720	02/14/2014 1630
460-71165-13	29-WGT28(6.0')	Solid	02/12/2014 1730	02/14/2014 1630
460-71165-14	29-WGT27(6.5')	Solid	02/12/2014 1745	02/14/2014 1630
460-71165-15	29-WGT26(6.5')	Solid	02/12/2014 1755	02/14/2014 1630
460-71165-16	29-WGT25(6.5')	Solid	02/12/2014 1800	02/14/2014 1630
460-71165-17	29-WGT24(7.5')	Solid	02/14/2014 0820	02/14/2014 1630
460-71165-18	29-WGT24(17.5')	Solid	02/14/2014 0830	02/14/2014 1630
460-71165-19FB	FB021414	Water	02/14/2014 0800	02/14/2014 1630
460-71165-20	29-WGT23(7.5')	Solid	02/14/2014 0835	02/14/2014 1630
460-71165-21	29-WGT22(7.5')	Solid	02/14/2014 0850	02/14/2014 1630
460-71165-21MS	29-WGT22(7.5')	Solid	02/14/2014 0850	02/14/2014 1630
460-71165-21MSD	29-WGT22(7.5')	Solid	02/14/2014 0850	02/14/2014 1630
460-71165-22	29-WGT21(10.5')	Solid	02/14/2014 0915	02/14/2014 1630
460-71165-23	29-WGU21(3.0')	Solid	02/14/2014 0925	02/14/2014 1630
460-71165-24	29-WGU22(10.5')	Solid	02/14/2014 0950	02/14/2014 1630
460-71165-25	29-WGU23(11.6')	Solid	02/14/2014 1010	02/14/2014 1630
460-71165-26	29-WGU24(10.5')	Solid	02/14/2014 1025	02/14/2014 1630
460-71165-27	29-WGU25(10.5')	Solid	02/14/2014 1110	02/14/2014 1630
460-71165-28	29-WGU26(7.0')	Solid	02/14/2014 1130	02/14/2014 1630
460-71165-29	29-WGU27(7.6')	Solid	02/14/2014 1145	02/14/2014 1630
460-71165-30	29-WGU29(3.0')	Solid	02/14/2014 1200	02/14/2014 1630
460-71165-31	29-WGU28(2.0')	Solid	02/14/2014 1255	02/14/2014 1630
460-71165-32	29-GPBT4(5-6')	Solid	02/14/2014 1310	02/14/2014 1630
460-71165-33	29-GPBT6(6-8')	Solid	02/14/2014 1320	02/14/2014 1630
460-71165-33MS	29-GPBT6(6-8')	Solid	02/14/2014 1320	02/14/2014 1630
460-71165-33MSD	29-GPBT6(6-8')	Solid	02/14/2014 1320	02/14/2014 1630
460-71165-34	29-GPBT7(5-7')	Solid	02/14/2014 1330	02/14/2014 1630
460-71165-35	29-GPBT7(15-17')	Solid	02/14/2014 1345	02/14/2014 1630
460-71165-36	29-WGS28(7.0')	Solid	02/12/2014 1630	02/14/2014 1630

EXECUTIVE SUMMARY - Detections

Client: TRC Environmental Corporation

Job Number: 460-71165-1

Lab Sample ID / Analyte	Client Sample ID	Result	Qualifier	Reporting Limit	Units	Method
460-71165-1	**29-WGR23(6.5')**					
Benzene		630		470	ug/Kg	8260C
Ethylbenzene		33000		470	ug/Kg	8260C
Xylenes, Total		140000		940	ug/Kg	8260C
Cyclohexane		35000		470	ug/Kg	8260C
Isopropylbenzene		9300		470	ug/Kg	8260C
Methylcyclohexane		160000		470	ug/Kg	8260C
Percent Moisture		9.7		1.0	%	Moisture
Percent Solids		90.3		1.0	%	Moisture
460-71165-2	**29-WGR22(13.5')**					
Benzene		97	J	200	ug/Kg	8260C
Ethylbenzene		10000		200	ug/Kg	8260C
Xylenes, Total		47000		400	ug/Kg	8260C
Cyclohexane		19000		200	ug/Kg	8260C
Isopropylbenzene		2800		200	ug/Kg	8260C
Methylcyclohexane		57000		200	ug/Kg	8260C
Percent Moisture		10.7		1.0	%	Moisture
Percent Solids		89.3		1.0	%	Moisture
460-71165-3	**29-WGR21(2.5')**					
Toluene		0.17	J	0.90	ug/Kg	8260C
Methylcyclohexane		0.23	J	0.90	ug/Kg	8260C
Percent Moisture		7.6		1.0	%	Moisture
Percent Solids		92.4		1.0	%	Moisture
460-71165-4	**29-WGS21(1.0')**					
Acetone		14	B	4.8	ug/Kg	8260C
Toluene		0.19	J	0.96	ug/Kg	8260C
Methylcyclohexane		0.21	J	0.96	ug/Kg	8260C
Percent Moisture		8.1		1.0	%	Moisture
Percent Solids		91.9		1.0	%	Moisture
460-71165-5	**29-WGS22(8.5')**					
Acetone		5.8	B	4.2	ug/Kg	8260C
Toluene		0.19	J	0.84	ug/Kg	8260C
Methylcyclohexane		0.18	J	0.84	ug/Kg	8260C
Percent Moisture		9.3		1.0	%	Moisture
Percent Solids		90.7		1.0	%	Moisture

EXECUTIVE SUMMARY - Detections

Client: TRC Environmental Corporation

Job Number: 460-71165-1

Lab Sample ID / Analyte	Client Sample ID	Result	Qualifier	Reporting Limit	Units	Method
460-71165-6	**29-WGS23(10.5')**					
Toluene		67	J	160	ug/Kg	8260C
Ethylbenzene		4300		160	ug/Kg	8260C
Xylenes, Total		23000		320	ug/Kg	8260C
Cyclohexane		13000		160	ug/Kg	8260C
Isopropylbenzene		1900		160	ug/Kg	8260C
Methylcyclohexane		42000		160	ug/Kg	8260C
Percent Moisture		11.6		1.0	%	Moisture
Percent Solids		88.4		1.0	%	Moisture
460-71165-7	**29-WGS24(6.5')**					
Benzene		80	J	410	ug/Kg	8260C
Ethylbenzene		19000		410	ug/Kg	8260C
Xylenes, Total		83000		830	ug/Kg	8260C
Cyclohexane		19000		410	ug/Kg	8260C
Isopropylbenzene		7600		410	ug/Kg	8260C
Methylcyclohexane		140000		410	ug/Kg	8260C
Percent Moisture		13.1		1.0	%	Moisture
Percent Solids		86.9		1.0	%	Moisture
460-71165-8	**29-WGS25(6.0')**					
Benzene		100	J	370	ug/Kg	8260C
Toluene		1900		370	ug/Kg	8260C
Ethylbenzene		7900		370	ug/Kg	8260C
Xylenes, Total		35000		750	ug/Kg	8260C
Cyclohexane		25000		370	ug/Kg	8260C
Isopropylbenzene		3400		370	ug/Kg	8260C
Methylcyclohexane		72000		370	ug/Kg	8260C
Percent Moisture		9.5		1.0	%	Moisture
Percent Solids		90.5		1.0	%	Moisture
460-71165-9	**29-WGS26(6.0')**					
Benzene		280		95	ug/Kg	8260C
Toluene		7300		95	ug/Kg	8260C
Ethylbenzene		4700		95	ug/Kg	8260C
Xylenes, Total		27000		190	ug/Kg	8260C
Cyclohexane		9300		95	ug/Kg	8260C
Isopropylbenzene		1300		95	ug/Kg	8260C
Methylcyclohexane		24000		95	ug/Kg	8260C
Percent Moisture		15.3		1.0	%	Moisture
Percent Solids		84.7		1.0	%	Moisture

EXECUTIVE SUMMARY - Detections

Client: TRC Environmental Corporation

Job Number: 460-71165-1

Lab Sample ID / Analyte	Client Sample ID	Result	Qualifier	Reporting Limit	Units	Method
460-71165-10	**29-WGS27(6.0')**					
Benzene		82	J	120	ug/Kg	8260C
Toluene		210		120	ug/Kg	8260C
Ethylbenzene		760		120	ug/Kg	8260C
Xylenes, Total		1200		240	ug/Kg	8260C
Cyclohexane		1600		120	ug/Kg	8260C
Isopropylbenzene		240		120	ug/Kg	8260C
Methylcyclohexane		7300		120	ug/Kg	8260C
Percent Moisture		8.7		1.0	%	Moisture
Percent Solids		91.3		1.0	%	Moisture
460-71165-11	**29-WGS29(2.3')**					
Acetone		43	B	4.6	ug/Kg	8260C
Carbon disulfide		0.26	J	0.92	ug/Kg	8260C
2-Butanone		5.7		4.6	ug/Kg	8260C
Benzene		0.75	J	0.92	ug/Kg	8260C
Toluene		0.18	J	0.92	ug/Kg	8260C
Cyclohexane		67		0.92	ug/Kg	8260C
Isopropylbenzene		0.44	J	0.92	ug/Kg	8260C
Methylcyclohexane		200		0.92	ug/Kg	8260C
Percent Moisture		11.0		1.0	%	Moisture
Percent Solids		89.0		1.0	%	Moisture
460-71165-12	**29-WGT29(6.0')**					
Acetone		58	B	4.8	ug/Kg	8260C
Carbon disulfide		0.48	J	0.96	ug/Kg	8260C
2-Butanone		14	*	4.8	ug/Kg	8260C
Benzene		2.4		0.96	ug/Kg	8260C
Toluene		0.22	J	0.96	ug/Kg	8260C
Xylenes, Total		1.1	J	1.9	ug/Kg	8260C
Cyclohexane		120		0.96	ug/Kg	8260C
Isopropylbenzene		1.9		0.96	ug/Kg	8260C
Methylcyclohexane		430		0.96	ug/Kg	8260C
Percent Moisture		11.0		1.0	%	Moisture
Percent Solids		89.0		1.0	%	Moisture
460-71165-13	**29-WGT28(6.0')**					
Ethylbenzene		15	J	85	ug/Kg	8260C
Cyclohexane		180		85	ug/Kg	8260C
Isopropylbenzene		23	J	85	ug/Kg	8260C
Methylcyclohexane		1300		85	ug/Kg	8260C
Percent Moisture		10.9		1.0	%	Moisture
Percent Solids		89.1		1.0	%	Moisture

EXECUTIVE SUMMARY - Detections

Client: TRC Environmental Corporation

Job Number: 460-71165-1

Lab Sample ID / Analyte	Client Sample ID	Result	Qualifier	Reporting Limit	Units	Method
460-71165-14	**29-WGT27(6.5')**					
Ethylbenzene		2000		110	ug/Kg	8260C
Xylenes, Total		130	J	210	ug/Kg	8260C
Cyclohexane		3700		110	ug/Kg	8260C
Isopropylbenzene		1400		110	ug/Kg	8260C
Methylcyclohexane		27000		110	ug/Kg	8260C
Percent Moisture		11.1		1.0	%	Moisture
Percent Solids		88.9		1.0	%	Moisture
460-71165-15	**29-WGT26(6.5')**					
Benzene		62	J	170	ug/Kg	8260C
Ethylbenzene		11000		170	ug/Kg	8260C
Xylenes, Total		26000		350	ug/Kg	8260C
Cyclohexane		11000		170	ug/Kg	8260C
Isopropylbenzene		3600		170	ug/Kg	8260C
Methylcyclohexane		55000		170	ug/Kg	8260C
Percent Moisture		12.5		1.0	%	Moisture
Percent Solids		87.5		1.0	%	Moisture
460-71165-16	**29-WGT25(6.5')**					
Benzene		25	J	180	ug/Kg	8260C
Toluene		470		180	ug/Kg	8260C
Ethylbenzene		5500		180	ug/Kg	8260C
Xylenes, Total		37000		360	ug/Kg	8260C
Cyclohexane		14000		180	ug/Kg	8260C
Isopropylbenzene		3600		180	ug/Kg	8260C
Methylcyclohexane		47000		180	ug/Kg	8260C
Percent Moisture		13.9		1.0	%	Moisture
Percent Solids		86.1		1.0	%	Moisture
460-71165-17	**29-WGT24(7.5')**					
Toluene		70	J	420	ug/Kg	8260C
Ethylbenzene		2500		420	ug/Kg	8260C
Xylenes, Total		11000		840	ug/Kg	8260C
Cyclohexane		22000		420	ug/Kg	8260C
Isopropylbenzene		1900		420	ug/Kg	8260C
Methylcyclohexane		56000		420	ug/Kg	8260C
Percent Moisture		14.0		1.0	%	Moisture
Percent Solids		86.0		1.0	%	Moisture

EXECUTIVE SUMMARY - Detections

Client: TRC Environmental Corporation

Job Number: 460-71165-1

Lab Sample ID / Analyte	Client Sample ID	Result	Qualifier	Reporting Limit	Units	Method
460-71165-18	**29-WGT24(17.5')**					
Toluene		80	J	350	ug/Kg	8260C
Ethylbenzene		2600		350	ug/Kg	8260C
Xylenes, Total		13000		710	ug/Kg	8260C
Cyclohexane		14000		350	ug/Kg	8260C
Isopropylbenzene		1500		350	ug/Kg	8260C
Methylcyclohexane		35000		350	ug/Kg	8260C
Percent Moisture		14.4		1.0	%	Moisture
Percent Solids		85.6		1.0	%	Moisture
460-71165-20	**29-WGT23(7.5')**					
Ethylbenzene		46	J	83	ug/Kg	8260C
Xylenes, Total		130	J	170	ug/Kg	8260C
Cyclohexane		1000		83	ug/Kg	8260C
Isopropylbenzene		980		83	ug/Kg	8260C
Methylcyclohexane		11000		83	ug/Kg	8260C
Percent Moisture		10.3		1.0	%	Moisture
Percent Solids		89.7		1.0	%	Moisture
460-71165-21	**29-WGT22(7.5')**					
Acetone		20		4.7	ug/Kg	8260C
Carbon disulfide		7.4		0.94	ug/Kg	8260C
Toluene		0.35	J	0.94	ug/Kg	8260C
Isopropylbenzene		3.0		0.94	ug/Kg	8260C
Methylcyclohexane		20		0.94	ug/Kg	8260C
Percent Moisture		11.0		1.0	%	Moisture
Percent Solids		89.0		1.0	%	Moisture
460-71165-22	**29-WGT21(10.5')**					
Acetone		6.6	B	3.9	ug/Kg	8260C
Toluene		0.15	J	0.78	ug/Kg	8260C
Methylcyclohexane		0.25	J	0.78	ug/Kg	8260C
Percent Moisture		11.4		1.0	%	Moisture
Percent Solids		88.6		1.0	%	Moisture
460-71165-23	**29-WGU21(3.0')**					
Acetone		8.8	B	4.7	ug/Kg	8260C
Toluene		0.17	J	0.94	ug/Kg	8260C
Methylcyclohexane		0.16	J	0.94	ug/Kg	8260C
Percent Moisture		10.6		1.0	%	Moisture
Percent Solids		89.4		1.0	%	Moisture

EXECUTIVE SUMMARY - Detections

Client: TRC Environmental Corporation

Job Number: 460-71165-1

Lab Sample ID / Analyte	Client Sample ID	Result	Qualifier	Reporting Limit	Units	Method
460-71165-24	**29-WGU22(10.5')**					
Percent Moisture		13.5		1.0	%	Moisture
Percent Solids		86.5		1.0	%	Moisture
460-71165-25	**29-WGU23(11.6')**					
Acetone		27		4.6	ug/Kg	8260C
Percent Moisture		9.6		1.0	%	Moisture
Percent Solids		90.4		1.0	%	Moisture
460-71165-26	**29-WGU24(10.5')**					
Acetone		13	B	5.1	ug/Kg	8260C
Carbon disulfide		0.91	J	1.0	ug/Kg	8260C
Toluene		0.25	J	1.0	ug/Kg	8260C
Ethylbenzene		4.2		1.0	ug/Kg	8260C
Xylenes, Total		11		2.0	ug/Kg	8260C
Cyclohexane		36		1.0	ug/Kg	8260C
Isopropylbenzene		2.5		1.0	ug/Kg	8260C
Methylcyclohexane		89		1.0	ug/Kg	8260C
Percent Moisture		14.6		1.0	%	Moisture
Percent Solids		85.4		1.0	%	Moisture
460-71165-27	**29-WGU25(10.5')**					
Acetone		28	B	4.2	ug/Kg	8260C
Carbon disulfide		0.52	J	0.84	ug/Kg	8260C
2-Butanone		3.0	J	4.2	ug/Kg	8260C
Benzene		3.3		0.84	ug/Kg	8260C
Toluene		38		0.84	ug/Kg	8260C
Ethylbenzene		54		0.84	ug/Kg	8260C
Xylenes, Total		220		1.7	ug/Kg	8260C
Cyclohexane		47		0.84	ug/Kg	8260C
Isopropylbenzene		7.7		0.84	ug/Kg	8260C
Methylcyclohexane		49		0.84	ug/Kg	8260C
Percent Moisture		14.4		1.0	%	Moisture
Percent Solids		85.6		1.0	%	Moisture

EXECUTIVE SUMMARY - Detections

Client: TRC Environmental Corporation

Job Number: 460-71165-1

Lab Sample ID / Analyte	Client Sample ID	Result	Qualifier	Reporting Limit	Units	Method
460-71165-28	**29-WGU26(7.0')**					
Acetone		56	B	4.3	ug/Kg	8260C
Carbon disulfide		0.34	J	0.87	ug/Kg	8260C
2-Butanone		5.6		4.3	ug/Kg	8260C
Toluene		0.29	J	0.87	ug/Kg	8260C
Ethylbenzene		3.5		0.87	ug/Kg	8260C
Xylenes, Total		5.3		1.7	ug/Kg	8260C
Cyclohexane		28		0.87	ug/Kg	8260C
Isopropylbenzene		3.0		0.87	ug/Kg	8260C
Methylcyclohexane		60		0.87	ug/Kg	8260C
Percent Moisture		11.0		1.0	%	Moisture
Percent Solids		89.0		1.0	%	Moisture
460-71165-29	**29-WGU27(7.6')**					
Isopropylbenzene		34	J	97	ug/Kg	8260C
Percent Moisture		15.6		1.0	%	Moisture
Percent Solids		84.4		1.0	%	Moisture
460-71165-30	**29-WGU29(3.0')**					
Benzene		27	J	87	ug/Kg	8260C
Ethylbenzene		270		87	ug/Kg	8260C
Xylenes, Total		34	J	170	ug/Kg	8260C
Cyclohexane		2700		87	ug/Kg	8260C
Isopropylbenzene		150		87	ug/Kg	8260C
Methylcyclohexane		5000		87	ug/Kg	8260C
Percent Moisture		8.3		1.0	%	Moisture
Percent Solids		91.7		1.0	%	Moisture
460-71165-31	**29-WGU28(2.0')**					
Benzene		24	J	87	ug/Kg	8260C
Ethylbenzene		12	J	87	ug/Kg	8260C
Cyclohexane		1400		87	ug/Kg	8260C
Isopropylbenzene		49	J	87	ug/Kg	8260C
Methylcyclohexane		4100		87	ug/Kg	8260C
Percent Moisture		6.0		1.0	%	Moisture
Percent Solids		94.0		1.0	%	Moisture

EXECUTIVE SUMMARY - Detections

Client: TRC Environmental Corporation

Job Number: 460-71165-1

Lab Sample ID / Analyte	Client Sample ID	Result	Qualifier	Reporting Limit	Units	Method
460-71165-32	**29-GPBT4(5-6')**					
Acetone		15	B	5.1	ug/Kg	8260C
Carbon disulfide		0.49	J	1.0	ug/Kg	8260C
2-Butanone		2.2	J	5.1	ug/Kg	8260C
Benzene		2.7		1.0	ug/Kg	8260C
Toluene		0.62	J	1.0	ug/Kg	8260C
Ethylbenzene		45		1.0	ug/Kg	8260C
Xylenes, Total		1.3	J	2.0	ug/Kg	8260C
Cyclohexane		73		1.0	ug/Kg	8260C
Isopropylbenzene		5.9		1.0	ug/Kg	8260C
Methylcyclohexane		180		1.0	ug/Kg	8260C
GRO		2400		2400	ug/Kg	8015D
C10-C44		28		10	mg/Kg	8015D
Percent Moisture		16.8		1.0	%	Moisture
Percent Solids		83.2		1.0	%	Moisture
460-71165-33	**29-GPBT6(6-8')**					
Benzene		360		180	ug/Kg	8260C
Ethylbenzene		13000		180	ug/Kg	8260C
Xylenes, Total		58000		350	ug/Kg	8260C
Cyclohexane		31000		180	ug/Kg	8260C
Isopropylbenzene		3900		180	ug/Kg	8260C
Methylcyclohexane		72000		180	ug/Kg	8260C
GRO		800000		91000	ug/Kg	8015D
C10-C44		1400		48	mg/Kg	8015D
Percent Moisture		9.5		1.0	%	Moisture
Percent Solids		90.5		1.0	%	Moisture
460-71165-34	**29-GPBT7(5-7')**					
Methylene Chloride		0.85		0.84	ug/Kg	8260C
Acetone		10	B	4.2	ug/Kg	8260C
Methylcyclohexane		0.26	J	0.84	ug/Kg	8260C
C10-C44		54		9.3	mg/Kg	8015D
Percent Moisture		6.8		1.0	%	Moisture
Percent Solids		93.2		1.0	%	Moisture
460-71165-35	**29-GPBT7(15-17')**					
Methylene Chloride		0.39	J	0.89	ug/Kg	8260C
Acetone		13	B	4.5	ug/Kg	8260C
C10-C44		95		10	mg/Kg	8015D
Percent Moisture		12.6		1.0	%	Moisture
Percent Solids		87.4		1.0	%	Moisture

EXECUTIVE SUMMARY - Detections

Client: TRC Environmental Corporation

Job Number: 460-71165-1

Lab Sample ID / Analyte	Client Sample ID	Result	Qualifier	Reporting Limit	Units	Method
460-71165-36	**29-WGS28(7.0')**					
Cyclohexane		3700		85	ug/Kg	8260C
Isopropylbenzene		730		85	ug/Kg	8260C
Methylcyclohexane		16000		85	ug/Kg	8260C
Percent Moisture		9.1		1.0	%	Moisture
Percent Solids		90.9		1.0	%	Moisture

METHOD SUMMARY

Client: TRC Environmental Corporation

Job Number: 460-71165-1

Description	Lab Location	Method	Preparation Method
Matrix: Solid			
Volatile Organic Compounds by GC/MS	TAL EDI	SW846 8260C	
Closed System Purge and Trap	TAL EDI		SW846 5035
Gasoline Range Organics (GRO) (GC)	TAL EDI	SW846 8015D	
Closed System Purge and Trap	TAL EDI		SW846 5035
Diesel Range Organics (DRO) (GC)	TAL EDI	SW846 8015D	
Microwave Extraction	TAL EDI		SW846 3546
Percent Moisture	TAL EDI	EPA Moisture	
Matrix: Water			
Volatile Organic Compounds by GC/MS	TAL EDI	SW846 8260C	
Purge and Trap	TAL EDI		SW846 5030C

Lab References:

TAL EDI = TestAmerica Edison

Method References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Shipping and Receiving Documents

777 New Durham Road
Edison, New Jersey 08817
Phone: (732) 549-3900 Fax: (732) 549-3679

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

CHAIN OF 460-71165 Chain of Custody ST

Name (for report and invoice) Mark Winbourne	Samplers Name (Printed) J/R. Never	Site/Project Identification Area 29 Remedial Enhancement Investigation
Company TRC	P. O. # 65643	State (Location of site): NJ: X NY: Other:
		Regulatory Program: QA Level: NJ Reduced
Address 21 Griffin Rd. North	Analysis Turnaround Time: Standard X	
City Windsor State CT	Rush Charges Authorized For: 2 Week 1 Week Other	
Phone 860-305-5903 Fax		

ANALYSIS REQUESTED (ENTER "X" BELOW TO INDICATE REQUEST)

Sample Identification	Date	Time	Matrix	No. of Cont.	Vocs (8260/5035)	LAB USE ONLY Sample Numbers
29-WGR23(6.5')	2/12/14	1410	Soil	4	X	-1
29-WGR22(13.5')		1435		4	X	-2
29-WGR21(2.5')		1450		4	X	-3
29-WGS21(1.0')		1505		4	X	-4
29-WGS22(8.5')		1520		4	X	-5
29-WGS23(10.5')		1530		4	X	-6
29-WGS24(6.5')		1545		4	X	-7
29-WGS25(6.0')		1600		4	X	-8
29-WGS26(6.0')		1615	V	4	X	-9
29-WGS27(6.0')	2/12/14	1620	Soil	4	X	-10

LAB USE ONLY: Project No: | Job No: 71165

Preservation Used: 1 = ICE, 2 = HCl, 3 = H_2SO_4, 4 = HNO_3, 5 = NaOH, 6 = Other MeOH/DI, 7 = Other _____

Soil: 1,6 | Water:

SHORT HOLD

Special Instructions: EDDs Required: EQuIS EPAR2/FAA; NJ Haz5A; TRC-CT

Water Metals Filtered (Yes/No)? N/A

Relinquished by	Company	Date / Time	Received by	Company
1)	TRC	2/14/14 1630	1)	TAEd 2/14/14 16:30
Relinquished by 2)	Company	Date / Time	Received by 2)	Company IR#4 2/2.1°C
Relinquished by 3)	Company	Date / Time	Received by 3)	Company 0/0.1°C
Relinquished by 4)	Company	Date / Time	Received by 4)	Company CS# 158027 158023

Laboratory Certifications: New Jersey (12028), New York (11452), Pennsylvania (68-522), Connecticut (PH-0200), Rhode Island (132), Massachusetts (M-NJ312), North Carolina (No. 578)

TAL - 0016 (0408)

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CHAIN OF CUSTODY / ANALYSIS REQUEST

Name (for report and invoice)	Samplers Name (Printed)	Site/Project Identification
Mark Winbourne	J.R. Never	Area 29 Remedial Enhancement Investigation
Company: TRC	P. O. # 65643	State (Location of site): NJ: X NY: Other:
		Regulatory Program: QA Level: NJ Reduced
Address: 21 Griffin Rd. North	Analysis Turnaround Time: Standard X	LAB USE ONLY Project No:
City: Windsor State: CT	Rush Charges Authorized For: 2 Week / 1 Week / Other	Job No: 71165
Phone: 860-305-5903 Fax:		

Sample Identification	Date	Time	Matrix	No. of Cont.	TCL VOCs (8260 / 5035)	TCL VOCs (8260) MS/MSD Vials Provided	2/14/14 Samples NJ FROZEN	Sample Numbers
29-WGS29 (2.3')	2/12/14	1640	Soil	4	X			-11
29-WGT29 (6.0')		1720		4	X			-12
29-WGT28 (6.0')		1730		4	X			-13
29-WGT27 (6.5')		1745		4	X			-14
29-WGT26 (6.5')		1755		4	X			-15
29-WGT25 (6.5')	2/12/14	1800	Soil	4	X			-16
29-WGT24 (7.5')	2/14/14	0820	Soil	4	X		X	-17
29-WGT24 (17.5')		0830	Soil	4	X		X	-18
FB 021414		0900	Aq	3		X		-19
29-WGT23 (7.5')	2/14/14	0835	Soil	4	X		X	-20
Preservation Used: 1 = ICE, 2 = HCl, 3 = H_2SO_4, 4 = HNO_3, 5 = NaOH — Soil:					6,7		1,7	
6 = Other Frozen, 7 = Other MeoH/DI — Water:						1,2		

Special Instructions: EDDS Required: Equis EPAR2/FAA; NJ Hazsite; TRC-CT

Water Metals Filtered (Yes/No)? N/A

Relinquished by	Company	Date / Time	Received by	Company
1)	TRC	2/14/14 1630	1)	TA Ed 2/14/14 16:30
Relinquished by 2)	Company	Date / Time	Received by 2)	Company
Relinquished by 3)	Company	Date / Time	Received by 3)	Company
Relinquished by 4)	Company	Date / Time	Received by 4)	Company

Laboratory Certifications: New Jersey (12028), New York (11452), Pennsylvania (68-522), Connecticut (PH-0200), Rhode Island (132). TAL - 0016 (0408)

Massachusetts (M-NJ312), North Carolina (No. 578)

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Edison, New Jersey 08817
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THE LEADER IN ENVIRONMENTAL TESTING

CHAIN OF CUSTODY / ANALYSIS REQUEST

Name (for report and invoice) Mark Winbourne	Samplers Name (Printed) J.R. Neves	Site/Project Identification Area 29 Remedial Enhancement Investigation
Company TRC	P. O. # G5643	State (Location of site): NJ: X NY: Other:
		Regulatory Program: GA Level I; NJ Reduced
Address 21 Griffin Rd. N.	Analysis Turnaround Time: Standard X	
City Windsor State CT 06095	Rush Charges Authorized For: 2 Week / 1 Week / Other	
Phone 960-305-5903 Fax		

Sample Identification	Date	Time	Matrix	No. of Cont.	TCL VOCs (8260 / 5035) MS/MSD Vol. Provided										LAB USE ONLY Project No: / Job No: 7165 / Sample Numbers
29-WGT22 (7.5')	2/14/14	0850	Soil	12	X	X									-21
29-WGT21 (10.5')		0915		4	X										-22
29-WGU21 (3.0')		0925		4	X										-23
29-WGU22 (10.5')		0950		4	X										-24
29-WGU23 (18.6')		1010		4	X										-25
29-WGU24 (10.5')		1025		4	X										-26
29-WGU25 (10.5')		1110		4	X										-27
29-WGU26 (7.0')		1130		4	X										-28
29-WGU27 (7.6')		1145		4	X										-29
29-WGU29 (3.0')	2/14/14	1200	Soil	4	X										-30
Preservation Used: 1 = ICE, 2 = HCl, 3 = H_2SO_4, 4 = HNO_3, 5 = NaOH				Soil:	1, 6										
6 = Other MeOH/DI, 7 = Other				Water:											

Special Instructions EDDs Required: EQuIS EPAR2/FAA; NJ HazSite; TRC-CT Water Metals Filtered (Yes/No)? N/A

Relinquished by	Company	Date / Time	Received by	Company
1) Mark Winbourne	TRC	2/14/14 1630	1)	TA Gd 2/14/14 16:30
Relinquished by 2)	Company	Date / Time	Received by 2)	Company
Relinquished by 3)	Company	Date / Time	Received by 3)	Company
Relinquished by 4)	Company	Date / Time	Received by 4)	Company

Laboratory Certifications: New Jersey (12028), New York (11452), Pennsylvania (68-522), Connecticut (PH-0200), Rhode Island (132). TAL - 0016 (0408)

Massachusetts (M-NJ312), North Carolina (No. 578)

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CHAIN OF CUSTODY / ANALYSIS REQUEST

Name (for report and invoice)	Samplers Name (Printed)	Site/Project Identification
Mark Winbourne →	R. Nevel	Area 29 Remedial Enhancement Investigation
Company: TRC	P. O. #: 65643	State (Location of site): NJ: X NY: Other:
		Regulatory Program: QA Level: NJ Reduced
Address: 21 Griffin Rd North	Analysis Turnaround Time: Standard X	LAB USE ONLY Project No:
City: Windsor State: CT	Rush Charges Authorized For: 2 Week 1 Week Other	Job No: 71165
Phone: 860-305-5903 Fax:		

Sample Identification	Date	Time	Matrix	No. of Cont.	TCL VOCs (8260/5035)	G.R.O.	D.R.O.	NJ (MS) V.I. provided							Sample Numbers
29-WG028 (2.0')	2/14/14	1255	Soil	4	X										-31
29-GPBT4 (5-6')		1310		6	X	X	X								-32
29-GPBT6 (6-8')		1320		18	X	X	X	X							-33
29-GPBT7 (5-7')		1330		6	X	X	X								-34
29-GPBT7 (15-17')	2/14/14	1345	Soil	6	X	X	X								-35
Preservation Used: 1 = ICE, 2 = HCl, 3 = H_2SO_4, 4 = HNO_3, 5 = NaOH				Soil:	1,6	1,7	1								
6 = Other MeOH/DI 7 = Other MeOH				Water:											

Special Instructions: EDDs Required: EQuIS EPAR2/FAA; NJ Hazsite; TRC-CT Water Metals Filtered (Yes/No)? N/A

Relinquished by	Company	Date / Time	Received by	Company
1)	TRC	2/14/14, 1630	1)	TA ED 2/14/14 16:30
Relinquished by	Company	Date / Time	Received by	Company
2)			2)	
Relinquished by	Company	Date / Time	Received by	Company
3)			3)	
Relinquished by	Company	Date / Time	Received by	Company
4)			4)	

Job Number: 71165

TestAmerica Edison Receipt Temperature and pH Log

Page 1 of 1

Number of Coolers: 2 IR Gun # 4

Temp. Cooler #1 (Deg C) (Raw/Corrected) 7.2/6.2°C
Temp. Cooler #2 (Deg C) (Raw/Corrected) 0.1/0.1°C
Temp. Cooler #3 (Deg C) (Raw/Corrected) _____

Temp. Cooler #4 (Deg C) (Raw/Corrected) _____
Temp. Cooler #5 (Deg C) (Raw/Corrected) _____
Temp. Cooler #6 (Deg C) (Raw/Corrected) _____

Temp. Cooler #7 (Deg C) (Raw/Corrected) _____
Temp. Cooler #8 (Deg C) (Raw/Corrected) _____
Temp. Cooler #9 (Deg C) (Raw/Corrected) _____

Sample No.	Ammonia (pH<2)	COD (pH<2)	Nitrate Nitrite (pH<2)	*Metals (pH<2)	Pest (pH 5-9)	PHC (pH<2)	Phenols (pH<2)	Sulfide (pH>9)	TKN (pH<2)	TOC (pH<2)	Total Cyanide (pH>12)	Total Phos (pH<2)	Other

If pH adjustments are required record the information below:

Sample No(s). adjusted: _____

Preservative Name/Conc.: _____ Volume of Preservative used (ml): _____

Lot # of Preservative: _____ Expiration Date: _____

Project Manager and the Department Manager should be notified about the samples which were pH adjusted.

** Samples for Metal analysis which are out of compliance must be acidified at least 24 hours prior to analysis.*

EDS-WI-038, Rev 3, 10/8/12

Initials: JCR Date: 2/14/14

Login Sample Receipt Checklist

Client: TRC Environmental Corporation

Job Number: 460-71165-1

Login Number: 71165
List Number: 1
Creator: Rivera, Kenneth

List Source: TestAmerica Edison

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	N/A	Not present
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	2.1°C, 0.1°C, IR #4
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	False	See NCM
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	False	Moisture containers recieved empty for #33
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	N/A	
Samples do not require splitting or compositing.	N/A	
Residual Chlorine Checked.	N/A	No analysis requiring residual chlorine check assigned.

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THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

Job Number: 460-73634-1

Job Description: FAA/Area 29 REI

For:
TRC Environmental Corporation
21 Griffin Road North
Windsor, CT 06095

Attention: Mr. Mark Winbourne

Approved for release.
Janet Mosley
Manager of Project Management Assistants
4/16/2014 1:06 PM

Designee for
Melissa Haas, Project Manager I
777 New Durham Road, Edison, NJ, 08817
(203)944-1310
melissa.haas@testamericainc.com
04/16/2014

The test results in this report meet all NELAP requirements unless specified within the case narrative. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory. All questions regarding this report should be directed to the TestAmerica Edison Project Manager.

TestAmerica Edison Certifications and Approvals: Connecticut: CTDOH #PH-0200, New Jersey: NJDEP (NELAP) #12028, New York: NYDOH (NELAP) #11452, NYDOH (ELAP) #11452, Pennsylvania: PADEP (NELAP) 68-00522 and Rhode Island: RIDOH LAO00132

Table of Contents

Table of Contents

CASE NARRATIVE

Client: TRC Environmental Corporation

Project: FAA/Area 29 REI

Report Number: 460-73634-1

This case narrative is in the form of an exception report, where only the anomalies related to this report, method specific performance and/or QA/QC issues are discussed. If there are no issues to report, this narrative will include a statement that documents that there are no relevant data issues.

It should be noted that samples with elevated Reporting Limits (RLs) as a result of a dilution may not be able to satisfy customer reporting limits in some cases. Such increases in the RLs are unavoidable but acceptable consequence of sample dilution that enables quantification of target analytes or interferences which exceed the calibration range of the instrument.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

RECEIPT
The samples were received on 4/2/2014 10:00 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 0.2° C.

Except:

The purchase order number listed on the COC was incorrect. The client requested that the lab use PO 65643 for billing.

Note: All samples which require thermal preservation are considered acceptable if the arrival temperature is within 2C of the required temperature or method specified range. For samples with a specified temperature of 4C, samples with a temperature ranging from just above freezing temperature of water to 6C shall be acceptable. Samples that are hand delivered immediately following collection may not meet these criteria, however they will be deemed acceptable according to NELAC standards, if there is evidence that the chilling process has begun, such as arrival on ice, etc.

VOLATILE ORGANICS
Sample 29-WG-P26 (5.75) (460-73634-3) was analyzed for Volatile organics in accordance with EPA SW-846 Methods 8260C. The samples were prepared on 04/02/2014 and analyzed on 04/14/2014.

The laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) for batch 218714 recovered outside control limits for the following analyte: 1,4-Dioxane. This analyte was biased high in the LCS/LCSD and was not detected in the associated sample(s); therefore, the data have been reported.

Refer to the QC report for details.

No other difficulties were encountered during the Volatile organics analysis.

All quality control parameters were within the acceptance limits.

VOLATILE ORGANICS
Samples FB040114 (460-73634-1), TB040114 (460-73634-2), 29-EG-G15GW(4-8) (460-73634-4), 29-EG-G15GW (14-18) (460-73634-5), 29-EG-G17GW (7-11) (460-73634-6), 29-EG-H17GW (5-9) (460-73634-7), 29-EG-I15GW (5-9) (460-73634-8), 29-EG-GBGW (4.5-8.5) (460-73634-9), 29-WG-Q26GW (5-9) (460-73634-10), 29-WG-Q25GW (5-9) (460-73634-11), 29-WG-Q24GW (4.5-8.5) (460-73634-12), 29-WG-Q23GW (5.5-9.5) (460-73634-13), 29-WG-R23GW (5.5-9.5) (460-73634-14), 29-WG-S24GW (4.5-8.5) (460-73634-15), 29-WG-S26GW (5-9) (460-73634-16), 29-WG-R26GW (6.5-10.5) (460-73634-17) and 29-WG-R24GW (8.5-12.5) (460-73634-18) were analyzed for Volatile organics in accordance with EPA SW-846 Methods 8260C. The samples were analyzed on 04/09/2014, 04/10/2014, 04/14/2014 and 04/15/2014.

The continuing calibration verification (CCV) associated with batch 217737 recovered outside control limit for 1,2-Dibromo-3-Chloropropane and Bromomethane. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The following samples are impacted: (CCVIS 460-217737/2).

The continuing calibration verification (CCV) associated with batch 217967 recovered outside control limit for Bromomethane. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported.

The continuing calibration verification (CCV) associated with batch 218769 recovered above the upper control limit for Acetone. The

samples associated with this CCV were non-detects for the affected analyte; therefore, the data have been reported.

The continuing calibration verification (CCV) associated with batch 218865 recovered outside control limits for 2-Hexanone. The samples associated with this CCV were non-detects for the affected analyte; therefore, the data have been reported.

Bromomethane failed the recovery criteria low for the MS of sample 29-EG-GBGW (4.5-8.5)MS (460-73634-9) in batch 460-217737. 1,1,2-Trichloroethane, Cyclohexane, Ethylbenzene and Methylcyclohexane failed the recovery criteria high.

1,1,2-Trichloroethane, Cyclohexane, Ethylbenzene and Methylcyclohexane failed the recovery criteria high for the MSD of sample 29-EG-GBGW (4.5-8.5)MSD (460-73634-9) in batch 460-217737.

1,1-Dichloroethane, Methyl tert-butyl ether, Methylene Chloride and trans-1,2-Dichloroethene exceeded the RPD limit for the MSD of sample 460-74021-2 in batch 460-217967.

1,4-Dioxane exceeded the RPD limit for the MSD of sample 460-74033-3 in batch 460-218865.

Refer to the QC report for details.

The following sample was diluted to bring the concentration of target analytes within the calibration range: 29-WG-Q26GW (5-9) (460-73634-10). Elevated reporting limits (RLs) are provided.

The following samples were diluted to bring the concentration of target analytes within the calibration range: 29-EG-I15GW (5-9) (460-73634-8), 29-WG-Q23GW (5.5-9.5) (460-73634-13), 29-WG-Q24GW (4.5-8.5) (460-73634-12), 29-WG-Q25GW (5-9) (460-73634-11), 29-WG-R24GW (8.5-12.5) (460-73634-18), 29-WG-R26GW (6.5-10.5) (460-73634-17). Elevated reporting limits (RLs) are provided.

The following sample was diluted to bring the concentration of target analytes within the calibration range and due to the abundance of non-target analytes: 29-WG-P26 (5.75) (460-73634-3). Elevated reporting limits (RLs) are provided.

The following sample was diluted to bring the concentration of target analytes within the calibration range: 29-WG-R23GW (5.5-9.5) (460-73634-14), 29-WG-S24GW (4.5-8.5) (460-73634-15), 29-WG-S26GW (5-9) (460-73634-16). Elevated reporting limits (RLs) are provided.

The following samples were diluted to bring the concentration of target analytes within the calibration range: 29-EG-G15GW (14-18) (460-73634-5), 29-EG-G15GW(4-8) (460-73634-4), 29-EG-G17GW (7-11) (460-73634-6), 29-EG-GBGW (4.5-8.5) (460-73634-9), 29-EG-H17GW (5-9) (460-73634-7). Elevated reporting limits (RLs) are provided.

Samples 29-EG-G15GW(4-8) (460-73634-4)[5X], 29-EG-G15GW (14-18) (460-73634-5)[5X], 29-EG-G17GW (7-11) (460-73634-6)[5X], 29-EG-H17GW (5-9) (460-73634-7)[5X], 29-EG-I15GW (5-9) (460-73634-8)[5X], 29-EG-GBGW (4.5-8.5) (460-73634-9)[5X], 29-WG-Q26GW (5-9) (460-73634-10)[25X], 29-WG-Q25GW (5-9) (460-73634-11)[25X], 29-WG-Q24GW (4.5-8.5) (460-73634-12)[10X], 29-WG-Q23GW (5.5-9.5) (460-73634-13)[10X], 29-WG-R23GW (5.5-9.5) (460-73634-14)[20X], 29-WG-S24GW (4.5-8.5) (460-73634-15) [20X], 29-WG-S26GW (5-9) (460-73634-16)[20X], 29-WG-R26GW (6.5-10.5) (460-73634-17)[25X] and 29-WG-R24GW (8.5-12.5) (460-73634-18)[25X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No other difficulties were encountered during the Volatile organics analysis.

All other quality control parameters were within the acceptance limits.

PERCENT SOLIDS/PERCENT MOISTURE

Sample 29-WG-P26 (5.75) (460-73634-3) was analyzed for percent solids/percent moisture in accordance with EPA Method CLPISM01.2 (Exhibit D). The samples were analyzed on 04/02/2014.

No difficulties were encountered during the %solids/moisture analysis.

All quality control parameters were within the acceptance limits.

SAMPLE SUMMARY

Client: TRC Environmental Corporation

Job Number: 460-73634-1

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
460-73634-1	FB040114	Water	04/01/2014 0730	04/02/2014 1000
460-73634-2	TB040114	Water	04/01/2014 0735	04/02/2014 1000
460-73634-3	29-WG-P26 (5.75)	Solid	04/01/2014 1035	04/02/2014 1000
460-73634-4	29-EG-G15GW(4-8)	Water	04/01/2014 1530	04/02/2014 1000
460-73634-5	29-EG-G15GW (14-18)	Water	04/01/2014 1540	04/02/2014 1000
460-73634-6	29-EG-G17GW (7-11)	Water	04/01/2014 1545	04/02/2014 1000
460-73634-7	29-EG-H17GW (5-9)	Water	04/01/2014 1610	04/02/2014 1000
460-73634-8	29-EG-I15GW (5-9)	Water	04/01/2014 1625	04/02/2014 1000
460-73634-9	29-EG-GBGW (4.5-8.5)	Water	04/01/2014 1120	04/02/2014 1000
460-73634-9MS	29-EG-GBGW (4.5-8.5)	Water	04/01/2014 1120	04/02/2014 1000
460-73634-9MSD	29-EG-GBGW (4.5-8.5)	Water	04/01/2014 1120	04/02/2014 1000
460-73634-10	29-WG-Q26GW (5-9)	Water	04/01/2014 1205	04/02/2014 1000
460-73634-11	29-WG-Q25GW (5-9)	Water	04/01/2014 1225	04/02/2014 1000
460-73634-12	29-WG-Q24GW (4.5-8.5)	Water	04/01/2014 1245	04/02/2014 1000
460-73634-13	29-WG-Q23GW (5.5-9.5)	Water	04/01/2014 1310	04/02/2014 1000
460-73634-14	29-WG-R23GW (5.5-9.5)	Water	04/01/2014 1335	04/02/2014 1000
460-73634-15	29-WG-S24GW (4.5-8.5)	Water	04/01/2014 1400	04/02/2014 1000
460-73634-16	29-WG-S26GW (5-9)	Water	04/01/2014 1415	04/02/2014 1000
460-73634-17	29-WG-R26GW (6.5-10.5)	Water	04/01/2014 1435	04/02/2014 1000
460-73634-18	29-WG-R24GW (8.5-12.5)	Water	04/01/2014 1455	04/02/2014 1000

EXECUTIVE SUMMARY - Detections

Client: TRC Environmental Corporation

Job Number: 460-73634-1

Lab Sample ID / Analyte	Client Sample ID	Result	Qualifier	Reporting Limit	Units	Method
460-73634-3	**29-WG-P26 (5.75)**					
Cyclohexane		5700		160	ug/Kg	8260C
Ethylbenzene		720		160	ug/Kg	8260C
Isopropylbenzene		970		160	ug/Kg	8260C
Methylcyclohexane		23000		160	ug/Kg	8260C
m-Xylene & p-Xylene		1000		160	ug/Kg	8260C
o-Xylene		440		160	ug/Kg	8260C
Percent Moisture		11.2		1.0	%	Moisture
Percent Solids		88.8		1.0	%	Moisture
460-73634-4	**29-EG-G15GW(4-8)**					
Cyclohexane		650		5.0	ug/L	8260C
Ethylbenzene		820		5.0	ug/L	8260C
Isopropylbenzene		130		5.0	ug/L	8260C
Methylcyclohexane		810		5.0	ug/L	8260C
m-Xylene & p-Xylene		1700		5.0	ug/L	8260C
o-Xylene		1.2	J	5.0	ug/L	8260C
460-73634-5	**29-EG-G15GW (14-18)**					
Cyclohexane		450		5.0	ug/L	8260C
Ethylbenzene		430		5.0	ug/L	8260C
Isopropylbenzene		85		5.0	ug/L	8260C
Methylcyclohexane		620		5.0	ug/L	8260C
m-Xylene & p-Xylene		1000		5.0	ug/L	8260C
o-Xylene		0.94	J	5.0	ug/L	8260C
460-73634-6	**29-EG-G17GW (7-11)**					
1,1-Dichloroethane		5.8		5.0	ug/L	8260C
1,1-Dichloroethene		2.5	J	5.0	ug/L	8260C
Benzene		360		5.0	ug/L	8260C
Cyclohexane		460		5.0	ug/L	8260C
Ethylbenzene		220		5.0	ug/L	8260C
Isopropylbenzene		130		5.0	ug/L	8260C
Methylcyclohexane		730		5.0	ug/L	8260C
m-Xylene & p-Xylene		730		5.0	ug/L	8260C
o-Xylene		120		5.0	ug/L	8260C
Toluene		1.2	J	5.0	ug/L	8260C

EXECUTIVE SUMMARY - Detections

Client: TRC Environmental Corporation

Job Number: 460-73634-1

Lab Sample ID / Analyte	Client Sample ID	Result	Qualifier	Reporting Limit	Units	Method
460-73634-7	**29-EG-H17GW (5-9)**					
1,1-Dichloroethane		4.7	J	5.0	ug/L	8260C
1,1-Dichloroethene		2.3	J	5.0	ug/L	8260C
Benzene		630		5.0	ug/L	8260C
Chloroethane		33		5.0	ug/L	8260C
Cyclohexane		510		5.0	ug/L	8260C
Ethylbenzene		440		5.0	ug/L	8260C
Isopropylbenzene		160		5.0	ug/L	8260C
Methylcyclohexane		790		5.0	ug/L	8260C
m-Xylene & p-Xylene		1600		5.0	ug/L	8260C
o-Xylene		130		5.0	ug/L	8260C
Toluene		2.9	J	5.0	ug/L	8260C
460-73634-8	**29-EG-I15GW (5-9)**					
Benzene		100		5.0	ug/L	8260C
Cyclohexane		610		5.0	ug/L	8260C
Ethylbenzene		1400		5.0	ug/L	8260C
Isopropylbenzene		190		5.0	ug/L	8260C
Methylcyclohexane		920		5.0	ug/L	8260C
m-Xylene & p-Xylene		270		5.0	ug/L	8260C
460-73634-9	**29-EG-GBGW (4.5-8.5)**					
Benzene		0.60	J	5.0	ug/L	8260C
Cyclohexane		480		5.0	ug/L	8260C
Ethylbenzene		680		5.0	ug/L	8260C
Isopropylbenzene		150		5.0	ug/L	8260C
Methylcyclohexane		680		5.0	ug/L	8260C
m-Xylene & p-Xylene		160		5.0	ug/L	8260C
460-73634-10	**29-WG-Q26GW (5-9)**					
Benzene		110		25	ug/L	8260C
Cyclohexane		570		25	ug/L	8260C
Ethylbenzene		1300		25	ug/L	8260C
Isopropylbenzene		200		25	ug/L	8260C
Methylcyclohexane		1100		25	ug/L	8260C
m-Xylene & p-Xylene		5200		25	ug/L	8260C

EXECUTIVE SUMMARY - Detections

Client: TRC Environmental Corporation

Job Number: 460-73634-1

Lab Sample ID / Analyte	Client Sample ID	Result	Qualifier	Reporting Limit	Units	Method
460-73634-11	**29-WG-Q25GW (5-9)**					
Benzene		230		25	ug/L	8260C
Cyclohexane		220		25	ug/L	8260C
Ethylbenzene		1300		25	ug/L	8260C
Isopropylbenzene		160		25	ug/L	8260C
Methylcyclohexane		410		25	ug/L	8260C
m-Xylene & p-Xylene		4900		25	ug/L	8260C
Toluene		11	J	25	ug/L	8260C
460-73634-12	**29-WG-Q24GW (4.5-8.5)**					
2-Butanone (MEK)		24	J	50	ug/L	8260C
4-Methyl-2-pentanone (MIBK)		23	J	50	ug/L	8260C
Acetone		170		50	ug/L	8260C
Benzene		13		10	ug/L	8260C
Cyclohexane		220		10	ug/L	8260C
Ethylbenzene		620		10	ug/L	8260C
Isopropylbenzene		150		10	ug/L	8260C
Methylcyclohexane		490		10	ug/L	8260C
m-Xylene & p-Xylene		3600		10	ug/L	8260C
o-Xylene		8.9	J	10	ug/L	8260C
Toluene		6.3	J	10	ug/L	8260C
460-73634-13	**29-WG-Q23GW (5.5-9.5)**					
Acetone		190		50	ug/L	8260C
Benzene		2.6	J	10	ug/L	8260C
Cyclohexane		55		10	ug/L	8260C
Ethylbenzene		490		10	ug/L	8260C
Isopropylbenzene		140		10	ug/L	8260C
Methylcyclohexane		360		10	ug/L	8260C
m-Xylene & p-Xylene		2300		10	ug/L	8260C
460-73634-14	**29-WG-R23GW (5.5-9.5)**					
Benzene		120		20	ug/L	8260C
Cyclohexane		590		20	ug/L	8260C
Ethylbenzene		1500		20	ug/L	8260C
Isopropylbenzene		140		20	ug/L	8260C
Methylcyclohexane		840		20	ug/L	8260C
m-Xylene & p-Xylene		5900		20	ug/L	8260C
o-Xylene		1500		20	ug/L	8260C
Toluene		400		20	ug/L	8260C

EXECUTIVE SUMMARY - Detections

Client: TRC Environmental Corporation

Job Number: 460-73634-1

Lab Sample ID / Analyte	Client Sample ID	Result	Qualifier	Reporting Limit	Units	Method
460-73634-15	**29-WG-S24GW (4.5-8.5)**					
Benzene		85		20	ug/L	8260C
Cyclohexane		470		20	ug/L	8260C
Ethylbenzene		860		20	ug/L	8260C
Isopropylbenzene		130		20	ug/L	8260C
Methylcyclohexane		1200		20	ug/L	8260C
m-Xylene & p-Xylene		3700		20	ug/L	8260C
o-Xylene		14	J	20	ug/L	8260C
Toluene		5.0	J	20	ug/L	8260C
460-73634-16	**29-WG-S26GW (5-9)**					
Benzene		400		20	ug/L	8260C
Cyclohexane		400		20	ug/L	8260C
Ethylbenzene		740		20	ug/L	8260C
Isopropylbenzene		74		20	ug/L	8260C
Methylcyclohexane		560		20	ug/L	8260C
m-Xylene & p-Xylene		3200		20	ug/L	8260C
o-Xylene		1300		20	ug/L	8260C
Toluene		3600		20	ug/L	8260C
460-73634-17	**29-WG-R26GW (6.5-10.5)**					
Benzene		850		25	ug/L	8260C
Cyclohexane		530		25	ug/L	8260C
Ethylbenzene		1500		25	ug/L	8260C
Isopropylbenzene		180		25	ug/L	8260C
Methylcyclohexane		1000		25	ug/L	8260C
m-Xylene & p-Xylene		5000		25	ug/L	8260C
o-Xylene		190		25	ug/L	8260C
Toluene		110		25	ug/L	8260C
460-73634-18	**29-WG-R24GW (8.5-12.5)**					
Benzene		870		25	ug/L	8260C
Cyclohexane		490		25	ug/L	8260C
Ethylbenzene		1300		25	ug/L	8260C
Isopropylbenzene		120		25	ug/L	8260C
Methylcyclohexane		660		25	ug/L	8260C
m-Xylene & p-Xylene		4600		25	ug/L	8260C
o-Xylene		560		25	ug/L	8260C
Toluene		1000		25	ug/L	8260C

METHOD SUMMARY

Client: TRC Environmental Corporation

Job Number: 460-73634-1

Description	Lab Location	Method	Preparation Method
Matrix: Solid			
Volatile Organic Compounds by GC/MS	TAL EDI	SW846 8260C	
Closed System Purge and Trap	TAL EDI		SW846 5035
Percent Moisture	TAL EDI	EPA Moisture	
Matrix: Water			
Volatile Organic Compounds by GC/MS	TAL EDI	SW846 8260C	
Purge and Trap	TAL EDI		SW846 5030C

Lab References:

TAL EDI = TestAmerica Edison

Method References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Shipping and Receiving Documents

777 New Durham Road
Edison, New Jersey 08817
Phone: (732) 549-3900 Fax: (732) 549-3679

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460-73634 Chain of Custody

CHAIN OF ST

Page 1 of 2

Name (for report and invoice) Mark Winbourne	Samplers Name (Printed) C. Carlson R. Nevue	Site/Project Identification FAA/Area 29 REI
Company TRC	P. O. # 67323	State (Location of site): NJ: X NY: Other:
Address 21 Griffin Rd North	Analysis Turnaround Time: Standard X	Regulatory Program:
City Windsor State CT 06095	Rush Chrages Authorized For: 2 Week 1 Week Other	LAB USE ONLY Project No:
Phone (860) 298-6237 Fax (860) 298-6399		Job No: 73634

Sample Identification	Date	Time	Matrix	No. of Cont.	TCL VOCs	Solids	Sample Numbers
FB040114	4/1/14	0730	DI	2	X		1
TB040114		0735	DI	2	X		2
29-WG-P26(5.75)		1035	Soil	4	X	X	3
29-EG-G15GW(4-8)		1530	GW	3	X		4
29-EG-G15GW(14-18)		1540	GW	3	X		5
29-EG-G17GW(7-11)		1545	GW	3	X		6
29-EG-H17GW(5-9)		1610	GW	3	X		7
29-EG-I15GW(5-9)		1625	GW	3	X		8
							9

SHORT HOLD

Preservation Used: 1 = ICE, 2 = HCl, 3 = H_2SO_4, 4 = HNO_3, 5 = NaOH, 6 = Other CH_3OH, 7 = Other H_2O

Soil:	6/7	1	
Water:	2		

Special Instructions Custody Seal # 768696 Fed Ex Tr # 803567680454

Water Metals Filtered (Yes/No)?

Relinquished by	Company	Date / Time	Received by	Company
1)	TRC	4/1/14 1800	1) (FedEx)	TA Ed 4/2/14 10:00
Relinquished by 2)	Company	Date / Time	Received by 2)	Company IR#5 0.1/0.2°C
Relinquished by 3)	Company	Date / Time	Received by 3)	Company CS#768696
Relinquished by 4)	Company	Date / Time	Received by 4)	Company

Laboratory Certifications: New Jersey (12028), New York (11452), Pennsylvania (68-522), Connecticut (PH-0200), Rhode Island (132), Massachusetts (M-NJ312), North Carolina (No. 578)

TAL - 0016 (0408)

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777 New Durham Road
Edison, New Jersey 08817
Phone: (732) 549-3900 Fax: (732) 549-3679

CHAIN OF CUSTODY / ANALYSIS REQUEST

Name (for report and invoice) Mark Winbourne	Samplers Name (Printed) C. Carlson, R. Neveu	Site/Project Identification FAA / Area 29 REI
Company TRC	P. O. # 67323	State (Location of site): NJ: ☒ NY: ☐ Other:
		Regulatory Program:
Address 21 Griffin Rd North	Analysis Turnaround Time: Standard ☒	
City Windsor State CT 06095	Rush Charges Authorized For: 2 Week ☐ 1 Week ☐ Other ☐	
Phone (860) 298-6237 Fax (860) 298-6399		

Sample Identification	Date	Time	Matrix	No. of Cont.	TCL VOCs	MS/MSD Volume Included									LAB USE ONLY Sample Numbers
29-EG-GB GW (4.5-8.5)	4/1/14	1120	GW	9	X	X									9
29-WG-Q26 GW (5-9)		1205	GW	3	X	X (DO)									10
29-WG-Q25 GW (5-9)		1225	GW	3	X										11
29-WG-Q24 GW (4.5-8.5)		1245	GW	3	X										12
29-WG-Q23 GW (5.5-9.5)		1310	GW	3	X										13
29-WG-R23 GW (5.5-9.5)		1335	GW	3	X										14
29-WG-S24 GW (4.5-8.5)		1400	GW	3	X										15
29-WG-S26 GW (5-9)		1415	GW	3	X										16
29-WG-R26 GW (6.5-10.5)		1435	GW	3	X										17
29-WG-R24 GW (8.5-12.5)	↓	1455	GW	3	X										18
				Soil:											
				Water:	2										

Preservation Used: 1 = ICE, 2 = HCl, 3 = H_2SO_4, 4 = HNO_3, 5 = NaOH
6 = Other _____, 7 = Other _____

Special Instructions: Custody Seal # 768696 Fed Ex Tr # 8035 6768 0454

Water Metals Filtered (Yes/No)? _____

Relinquished by	Company	Date / Time	Received by	Company
1)	TRC	4/1/14 1800	1) (Fedex)	TA CT 4/2/14 10:00
Relinquished by 2)	Company	Date / Time	Received by 2)	Company
Relinquished by 3)	Company	Date / Time	Received by 3)	Company
Relinquished by 4)	Company	Date / Time	Received by 4)	Company

Laboratory Certifications: New Jersey (12028), New York (11452), Pennsylvania (68-522), Connecticut (PH-0200), Rhode Island (132).
Massachusetts (M-NJ312), North Carolina (No. 578)

TAL - 0016 (0408)

TestAmerica Edison Receipt Temperature and pH Log

Job Number: 73634

Number of Coolers: 1 IR Gun # 5

Temp. Cooler #1 (Deg C) (Raw/Corrected): 5.1/5.2 Temp. Cooler #4 (Deg C) (Raw/Corrected): _____ Temp. Cooler #7 (Deg C) (Raw/Corrected): _____

Temp. Cooler #2 (Deg C) (Raw/Corrected): _____ Temp. Cooler #5 (Deg C) (Raw/Corrected): _____ Temp. Cooler #8 (Deg C) (Raw/Corrected): _____

Temp. Cooler #3 (Deg C) (Raw/Corrected): _____ Temp. Cooler #6 (Deg C) (Raw/Corrected): _____ Temp. Cooler #9 (Deg C) (Raw/Corrected): _____

Sample No.	Ammonia (pH<2)	COD (pH<2)	Nitrate Nitrite (pH<2)	*Metals (pH<2)	Pest (pH 5-9)	PHC (pH<2)	Phenols (pH<2)	Sulfide (pH>9)	TKN (pH<2)	TOC (pH<2)	Total Cyanide (pH>12)	Total Phos (pH<2)	Other

If pH adjustments are required record the information below:

Sample No(s). adjusted: _____

Preservative Name/Conc.: _____ Volume of Preservative used (ml): _____

Lot # of Preservative: _____ Expiration Date: _____

Project Manager and the Department Manager should be notified about the samples which were pH adjusted.

** Samples for Metal analysis which are out of compliance must be acidified at least 24 hours prior to analysis.*

EDS-WI-038, Rev 3, 10/8/12

Initials: KR Date: 4/2/14

Login Sample Receipt Checklist

Client: TRC Environmental Corporation

Job Number: 460-73634-1

Login Number: 73634
List Number: 1
Creator: Elvie, Cloide

List Source: TestAmerica Edison

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	768696
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	0.2°C IR#5
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	N/A	
Samples do not require splitting or compositing.	N/A	
Residual Chlorine Checked.	N/A	